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ROENTGEN RAY EXAMINATION OF THE SMALL INTESTINE IN NUTRITIONAL DISTURBANCES.*

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New York, N. Y.

INTRODUCTION

When the history of the present medical age is written, the investigation of the problems of nutrition will stand out as a major achievement. Numerous writers have testified that malnutrition in its various forms is far from uncommon in this land of plenty and that its clinical manifestations are greatly varied. It is of considerable importance to recognize this condition, particularly in its early stages, and to correct it without delay. To this end roentgen ray methods of examination seem to be making an increasingly important contribution.

The purpose of this paper is to discuss the disturbances in the physiology and morphology of the small intestine, which are associated with abnormal nutritional conditions, and their manifestations on roentgen ray examination.

In this discussion the term "deficiency state" will be used in a broad sense to imply a lack of some important factor necessary for proper functioning of the organism, e.g. vitamin or protein, even though the exact nature of the deficiency or deficiencies may not be known.

CLASSIFICATION

Deficiency states have been divided into two broad groups, primary and secondary.

Primary deficiency states are those which apparently arise without obvious cause, e.g. celiac disease, non-tropical sprue, etc. Possibly a chronically deficient diet may be a factor.

Those deficiency states are classed as secondary in which the condition is caused by, or at least associ-

ated with, disease of the gastro-intestinal tract which might interfere with the digestion or absorption of nutriment, e.g. peptic ulcer, carcinoma, primary disease of the small intestine such as sclerosing enteritis or tuberculosis, primary disease of the mesentery such as sclerosing inflammation of the lymphatics or lymphoblastoma, or biliary tract disease. They also result from the low vitamin intake incidental to some therapeutic diets or to voluntary dietary restriction.

LITERATURE

Attention was first called to the changes in the small intestine demonstrable by roentgen ray methods in "chronic steatorrhoea" by Snell and Camp (1934). Mackie and Pound (1935) found the same changes in tropical sprue. Mackie, Miller and Rhoads (1935) described similar changes associated with severe chronic colitis. The writer (1936) pointed out similar but usually less marked disturbances in the small intestine in cases of infantile celiac disease. Snell and Camp remarked that the changes they noted were probably not specific and could be caused by other conditions. In this connection it is of interest that Vespignani (1925) described in four cases exactly the same type of small intestine disturbance which he called small intestinal stasis without obstruction, and at operation found "chronic mesenteritis"; his patients apparently did not have steatorrhoea. Gutzeit and Kuhlbaum (1934) demonstrated hypomotility and dilatation of the small intestine in icterus and showed by experiments on dogs that the disturbance was due to a lack of bile in the intestine and could be relieved by the oral administration of bile. Barden and his co-workers (1938) showed that similar intestinal disturbances could be produced in dogs by lowering the serum protein and could be made to disappear by raising the blood protein to normal.

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Read before the joint meeting of the Medical Society of Virginia and the West Virginia State Medical Association at White Sulphur Springs, W. Va., July 29-31, 1940.

Thus it appears that Snell and Camp's prediction was correct and that these roentgen abnormalities of small intestinal morphology and physiology may be associated with a number of different conditions.

TECHNIQUE OF EXAMINATION

Abnormalities of the small intestine in deficiency states are often noted on ordinary barium meal examination of the gastro-intestinal tract, if the examiner takes the trouble to look at whatever loops of jejunum or ileum which happen to be filled. However, these changes are best brought out by a special examination of the small intestine which we have come to call a "small intestine study".

The patient appears for examination early in the morning without breakfast. Two ounces of plain barium sulphate stirred up in water are given and the stomach and duodenum are examined in the usual way. Films of the abdomen with the patient prone are taken at half-hourly intervals until the barium reaches the cecum or until five hours have elapsed, when the patient is given lunch. Eating is normally followed by increased motility of the small intestine. Fluoroscopic observations are made at least two or three times during the procedure.

THE NORMAL SMALL INTESTINE

Recognition of the changes under discussion depends upon familiarity with the appearance of the normal small intestine. Good discussions of the roentgen manifestations of the normal small intestine have been published by Menville and Ané; Cole; Ravdin, Pendergrass, Johnston and Hodes; and others. The details cannot be repeated here.

In brief, (Figure 1) the barium shadow of the normal small intestine is usually continuous and the lumen is even in width except where a contraction happens to be taking place. The peristaltic constrictions are usually short and the wall promptly relaxes behind them. The width of the jejunal shadow averages 2.5 to 3.0 cm., and that of the ileum 2.0 to 2.5 cm. The high mucosal folds of the jejunum give the barium shadow the characteristic feathery appearance. These folds are usually 1 to 2 mm. wide and lie very close to each other, 1 to 3 mm. apart. Lower in the jejunum the folds become lower and lie farther apart but are not wider. The ileal margins often appear smooth but low mucosal folds can usually be demonstrated by pressure films.

FIGURE 1
NORMAL SMALL INTESTINE



The barium shadow is continuous. The lumen is even in caliber except at the site of short peristaltic contractions. The mucosal folds are normal in width and spacing.

Under normal conditions the barium reaches the cecum in from one and one-half to five hours, the average being between two and four hours; the ileum contains barium at six hours and is empty at nine hours. Eating is normally followed by increased motility of the small intestine; occasionally the normal ileum does not begin to expel barium until food is taken.

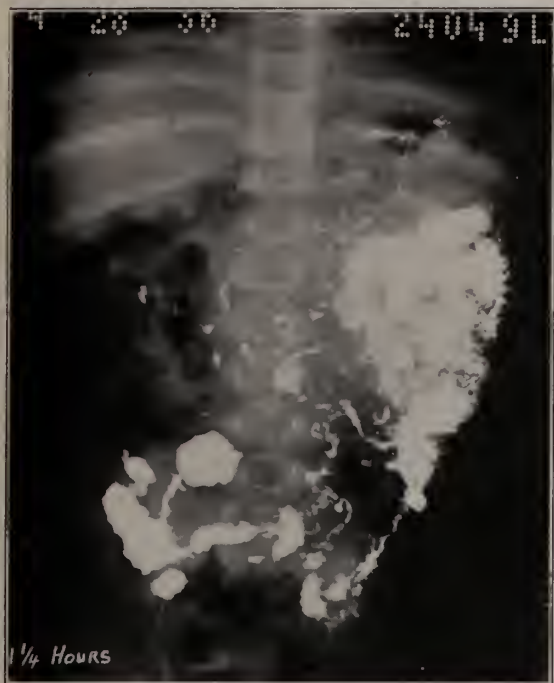
CLINICAL MANIFESTATIONS

Deficiency states may occur at any age, from newborn infants to the aged. Andersen found atrophy of the pancreas associated with celiac disease in newborn infants, indicating that the disturbance was initiated before birth.

The clinical manifestations of deficiency states are very variable and cannot be discussed here at length. However, symptoms of some sort of digestive tract disturbance are present in most deficiency conditions.

The signs of celiac disease in infants (Figure 2) are summarized by Andersen as (1) failure to gain

FIGURE 2
INFANTILE CELIAC DISEASE



Abnormal segmentation of the middle of the small intestine with coarsening of the mucosal folds of the jejunum. (One and one-fourth hours.)

Unit No. 483539. A twenty-three-month-old girl was admitted because of malnutrition. At ten months she began to vomit without apparent cause but later improved for a while. For five weeks before admission she had a poor appetite and watery diarrhoea with six to ten stools daily. Physical examination showed emaciation, abdominal distention, generalized oedema, hypotonia and wasting of the muscles. The tongue was red and raw. The skeleton was markedly decalcified. Blood calcium 8.3; Phosphorus 3.7; Serum protein 3.77. With a high protein, high vitamin diet and liver extract intramuscularly she improved rapidly and was discharged eleven weeks after admission.

weight on an adequate diet, (2) a large abdomen at birth, (3) hunger, (4) absence of diarrhoea or vomiting, (5) large stools, sometimes recognized as fatty, (6) intolerance to fat, and (7) chronic infection of the respiratory tract. Andersen states that celiac disease with atrophy of the pancreas can be differentiated from celiac disease with a normal pancreas only by demonstrating the absence of pancreatic enzymes in the duodenal contents or by pathologic examination of the pancreas.

The group of primary deficiency conditions in adults usually called chronic steatorrhoea, sprue,

non-tropical sprue (Figures 3A, 3B, 3C), adult celiac disease, etc., is usually associated at times during the course of the disease with diarrhoea with an excess of fat in the stools, with variable abdominal distress and sometimes with rapid loss of weight. In some cases of atypical deficiency conditions no diarrhoea or excess of fat in the stools may be present and the symptoms may suggest some other abdominal condition, for example peptic ulcer (Figure 4).

FIGURE 3A
NONTROPICAL SPRUE (ADULT CELIAC DISEASE)



Examination November 26, 1935, showed dilatation of the jejunum with absence of the mucosal folds and fluid levels. (See Figures 3B and 3C.)

The symptoms of a secondary deficiency state may be entirely obscured by those of the primary condition, such as chronic peptic ulcer with gastric retention, chronic sclerosing enteritis, or chronic ulcerative colitis. On the other hand the symptoms of a deficiency state may be the only clinical manifestations of the primary disease, e.g. lymphosarcoma of the intestine (Lehmkuhl; Golden) or sclerosing mesenteritis.

In many primary deficiency states a low blood calcium is often present with demineralization of the skeleton and even tetany (Pendergrass and Comroe). In some cases the blood protein is low and may be

low enough to cause oedema. Hyperchromic anaemia is often found, which may suggest pernicious anaemia. Free HCl is usually present in the stomach. The absorption of glucose is very slow when the disease is active, as manifested by flat blood sugar curves following the ingestion of a glucose solution. By blocking a short section of the small intestine with a two-balloon Miller-Abbott tube and injecting a glucose solution into the loop thus isolated, Groen demonstrated very slow absorption by withdrawing the residual solution after a lapse of time and determining the amount of sugar remaining. It seems probable that the absorption of other materials than fat and glucose, including vitamins, may be defective. The condition of the small intestine in well

ment. One patient responded only to a banana diet. This type of proof can hardly be considered satisfactory in the scientific sense. Chemical and other types of tests for the concentration of certain specific vitamins in the blood and urine are being continu-

FIGURE 3B

NONTROPICAL SPRUE (ADULT CELIAC DISEASE)



The six-hour film of a small intestine study December 6, 1935, shows "flocculation" of the barium, which has not yet reached the cecum. (See Figure 3C.)

advanced cases, therefore, may be part of a vicious circle which may have to be interrupted by the parenteral administration of vitamins.

The only proof of the accuracy of a diagnosis of a deficiency state is the patient's response to specific vitamin therapy. Often the parenteral administration of liver extract is followed by prompt improve-

FIGURE 3C

NONTROPICAL SPRUE (ADULT CELIAC DISEASE) AFTER TREATMENT



The two and one-half-hour film April 26, 1940, discloses no evidence of dilatation of the jejunum. Mucosal folds are now present but are slightly coarsened. Motility is still a little slower than usual. The examination shows evidence of marked improvement in the morphology and physiology of the intestine as compared with the examinations in 1935.

Unit No. 473118. A thirty-four-year-old man was admitted because of diarrhoea and loss of twenty-five pounds weight of two months' duration and epigastric distress relieved by induced vomiting, and intermittent chills and fever of four months' duration. Physical examination was negative except for emaciation and a protruding abdomen. The stools were light and foamy, and contained fatty acid crystals. Definite improvement appeared following two injections of liver extract. The treatment consisted of a "sprue diet" including bananas and intramuscular injections of liver. After two years the latter were discontinued and the extract was given by mouth. In 1937 he had diarrhoea for three days after omitting bananas from his diet for a week. In 1940 he was perfectly well without liver extract, taking three to four bananas a day and Vitamin B Complex.

ously developed but opinion is not yet unanimous as to their reliability and significance. At present good clinical judgment seems to be the best test.

INTESTINAL PATHOLOGY

The pathologic changes in the intestinal tract in deficiency states, like the clinical manifestations, are variable both in experimental animals and in clinical cases, according to the reports in the literature. Atrophy of all of the coats of the bowel and degeneration of nerve cells in the ganglia of the intestinal wall were found by McCarrison in monkeys and pigeons which had been given a very deficient diet until they died; these animals showed striking individual variations, not only in the pathologic changes in the intestinal tract but in other organs as well. Somewhat similar findings have been observed in advanced human deficiency states, such as sprue, pellagra, and beri-beri, with striking individual variations. Ulcers of the small intestine may be present and may perforate (Manson-Bahr, 1924), as happened in one of our cases. Hemorrhage into the mucous membrane and into the lumen has been observed. Oedema of the mucosa, of the submucosa, and atrophy of the mucosa and of the muscle coat have been found.

Very little seems to be known about the pathologic changes of the earlier stages of nutritional disturbances in adults. Even in the fatal conditions of infants with marked nutritional and intestinal disturbances, the pathology of the intestine is obscure. Siegmund, in Henke and Lubarsch's Handbook of Pathology, takes nearly a page to discuss the difficulty in the differentiation of postmortem changes and artefacts from the true picture of the pathologic process. In forty-nine necropsy cases of atrophy of the pancreas in infants and children with clinical evidence of celiac disease Andersen described no abnormality of the intestine. It seems peculiar that such marked clinical and roentgenologic evidence of intestinal disturbances should be present without pathologic changes in the wall. Probably special methods of investigation are necessary to demonstrate early or relatively slight histologic changes which may be of profound physiologic importance. For example, the study of the intramural nerve cells, which undoubtedly play a part in intestinal physiology, requires special preparation of specimens. At the present time a satisfactory correlation of the dis-

turbances demonstrable by X-ray and the pathologic findings, or the lack of them, is impossible.

ROENTGEN RAY MANIFESTATIONS

The abnormalities of form and movement found on X-ray examination of the small intestine in deficiency states appear to be different in different

FIGURE 4
DEFICIENCY STATE WITHOUT DIARRHOEA



The six-hour film discloses a gastric residue of at least one-third the barium meal, marked coarsening and irregularity of the mucosal folds of the duodenum and jejunum, uneven caliber of the small intestinal lumen, segmentation in the middle loops, and hypomotility as the barium has not yet reached the cecum. (It is difficult to select one film which gives an adequate picture of a small intestine study.)

Unit No. 528757. A twenty-nine-year-old woman came to the clinic complaining of epigastric and periumbilical pain of three months' duration with the loss of twenty pounds in weight. The onset occurred after a period of great anxiety. Later she had night sweats and increasing weakness. The clinician suspected the possibility of a peptic ulcer. The barium studies disclosed no evidence of peptic ulcer. The findings outlined above were interpreted as consistent with a deficiency state. Liver injections were followed by prompt improvement. Serial small intestine studies over a period of two years show that the jejunum apparently returned completely to normal but in the upper ileum markedly abnormal segmentation remains in spite of the fact that the patient is symptom free.

stages of the disease, and even in the advanced cases they are variable. They may be conveniently assembled in three groups.

1. Motility.

A. Hypermotility, apparently in the earlier stages.

B. Hypomotility, in the advanced stages (Figures 3A, 3B).

C. Dilatation, particularly in the jejunum in the advanced cases (Figure 3A).

D. Abnormal segmentation, that is, elongated areas of contraction, suggesting spasm, between which the lumen may be normal in caliber or larger. The contractions may be so marked that no barium remains in the contracted areas, giving the effect of scattered separated boluses (Figure 5B).

2. Mucous Membrane.

A. Coarsening of the mucosal folds, particularly in the duodenum and jejunum, meaning that they are wider, lower, and farther apart and, therefore, fewer in number (Figure 5A).

B. Obliteration of the mucosal folds in the advanced cases, producing a smooth wall (Figure 3A).

3. Flocculation of the Barium Shadow.

This is a coarsely granular appearance as if the aqueous suspension of barium sulphate were coarsely emulsified with some non-miscible fluid; it seems more likely to be present in the advanced cases (Figure 3B).

In well marked cases of primary deficiency states, hypomotility of the stomach is frequently found (Figure 4). It is manifested by a six hour gastric residue, unexplained by ulcer or pyloric obstruction, with sluggish ineffective peristalsis, and often with antral spasm. This may play a part in the production of flat blood sugar curves by delaying the expulsion of the ingested glucose solution into the small intestine where absorption takes place. With effective treatment the emptying of the stomach becomes normal.

EFFECT OF TREATMENT

Snell and Camp (1934) remarked that the appearance of the small intestine changes *toward* the

normal as a result of treatment of chronic steatorrhoea. Snell (1939) states that proper treatment may be followed by a complete restoration to the normal in appearance. We have not as yet seen this happen in a case of well developed steatorrhoea (Figure 3C). Treatment of deficiency conditions in the earlier stages, however, may be followed by a return to normal as far as the appearance of the barium shadows is concerned. A study of our cases gives the impres-

FIGURE 5A
DEFICIENCY STATE APPARENTLY ASSOCIATED WITH
AMOEBIIC DYSENTERY



The mucosal folds of the jejunum are coarsened and widely separated, and the lumen is uneven in caliber. (One and one-half hours.)

sion that the ability of the small intestine to return to normal depends in part upon the duration of the trouble. It would seem that permanent irreversible changes occur if the condition exists long enough. The upper part of the small intestine seems to show earlier and more marked improvement than the lower part. Segmentation may persist in the proximal ileum after the jejunum appears normal.

Reëxamination of the small intestine at intervals after the institution of treatment is very instructive. The residual abnormalities may give a clue to the appearance to be expected in the earlier or milder

cases. In many instances objective improvement in the small intestine lags far behind clinical improvement.

FIGURE 5B
DEFICIENCY STATE APPARENTLY ASSOCIATED WITH
AMOEBC DYSENTERY



Typical segmentation is present in the middle and lower loops of small intestine with slight flocculation of the barium. (Three hours.)

Unit No. 523056. A forty-one-year-old business man, a resident of Mexico City for two and one-half years, one month before admission had a chill, headache, weakness and a slight fever for two days. Then followed severe diarrhoea—forty stools a day—with lower abdominal cramps, rectal burning and tenesmus. His local doctor reported the stools to be swarming with amoebae. The administration of emetine was followed immediately by cessation of pain but the diarrhoea persisted. He lost fourteen pounds in a month. The stools were pale and contained much neutral fat and no amoebae. Barium enema and proctoscopic examination disclosed nothing abnormal. The hgb., blood protein and calcium were normal. Basal metabolism was -21 . The small intestine study, illustrated above, was interpreted as consistent with a deficiency state. With the administration of liver extract and Vitamin B complex the diarrhoea rapidly diminished and the patient became symptom free. It would seem probable that the deficiency state was precipitated by the acute amoebic dysentery, which was thought to be responsible for the continuation of the diarrhoea until the small intestine study disclosed evidence of a deficiency state.

DIFFERENTIAL DIAGNOSIS

The well-advanced changes in the small intestine—dilatation, smoothing of the wall, hypomotility, marked segmentation—have been observed in all forms of primary deficiency states, in hypoproteinemia, and in deficiencies produced by primary disease of the mesentery. The changes characteristic of the earlier stages—hypermotility, coarsening of the mucosal folds, hypertonicity and segmentation—can be produced in all of the above-mentioned conditions. They have been seen with tuberculous mesenteric lymphangitis and lymphadenitis. In one case temporary segmentation appeared when a patient became nervous and upset. Segmentation was described by Mills (1922) as the result of multiple peritoneal adhesions, but these segments, in my experience, are short and the mucosal folds are normal in size and distribution; the limitation in mobility of the intestinal loops can be easily demonstrated by palpation under the fluoroscope.

In true pernicious anaemia the small intestine pattern is normal.

At the present time a differential diagnosis of the type and the cause of a deficiency state based on the appearance of the intestine cannot be made.

COMMENT

As more attention is paid to the small intestine in routine gastro-intestinal examinations it becomes increasingly apparent that these small intestinal changes are recognizable in patients whose symptoms do not suggest any of the previously mentioned deficiency conditions. In a number of our cases the first suggestion that the patient might have a deficiency state came from the X-ray examination. These changes are frequently found in association with common, easily recognized diseases of the gastro-intestinal tract. The importance to surgeons of the recognition and correction of nutritional deficiencies is attested by the number of articles dealing with this topic in recent surgical literature.

Many workers on pellagra, sprue and beri-beri have pointed out that indefinite abdominal symptoms very frequently occur early in the course of the disease before its outstanding characteristic manifestations appear and before a clinical diagnosis can be made. Experience thus far seems to justify the assumption that a properly done roentgen examination of the intestinal tract in the early stages of these diseases would in many cases disclose disturbances

in the small intestine and thus assist in drawing attention to the possibility of a deficiency state before serious damage is done.

CONCLUSIONS

Diseases in which nutritional deficiency plays either a primary or a secondary role are relatively common. They are associated with disturbances in the physiology and morphology of the small intestine which are demonstrable by roentgen methods of examination. These disturbances are best demonstrated by special examination of the small intestine but often appear as a by-product of a routine gastro-intestinal examination for disease of the stomach or duodenum. They are recognizable not only in advanced but also in early cases. A satisfactory explanation of the mechanism of their production is not available at present.

Although a differential diagnosis cannot be made, the detection of these intestinal disturbances may serve to call attention to the presence of a deficiency state in cases in which the clinical picture is obscure.

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CANCER CONTROL IN VIRGINIA.

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Rising death rates from cancer offer evidence of the existence of a problem of rapidly increasing seriousness. Whereas the medical profession finds itself devoting more and more time and thought to the disease, the interest in cancer of the lay world is enlarging by geometrical progression. The problem rests, however, squarely in the lap of the profession; lay help is needed in financing the triple program of research, lay education and treatment, but the ways of expending available money—the strategy and tactics of the campaign against cancer—are solely the concern of doctors. They know what is known of the fundamental nature of cancer and they know abundantly its distressing manifestations in the patient, its effect on the daily lives of the sufferer and his family. They constitute the group that must in the first place educate the public in the early symptoms and in the second place be alert to detect the early signs. In the present state of our knowledge, no matter how vigorously investigation into the nature of cancer is being prosecuted, these two factors are the only first steps of importance in practical attempts to control the disease. Every practicing physician is on the firing line.

For this reason it has seemed desirable to a group of physicians who are active in the existing campaign against cancer in Virginia to present to the profession a detailed statement of that campaign and to suggest the relationship to it of every member of the Medical Society of Virginia. We are fortunate in this State in possessing a thoroughly established incorporated body, the Virginia Cancer Foundation, which is guided by the Medical Society of Virginia through its Cancer Committee. Around this organization all attempts at a wide program for cancer control should center. It is, in fact, an instrument of almost unlimited possibilities on which the medical profession can and should depend.

Unfortunately, as the result of a series of misunderstandings which need not be related here, a certain number of physicians in the State have expressed themselves as not being in complete accord

with the aims or the methods of the Virginia Cancer Foundation. If this reaction among physicians is at all widespread, the cause of cancer control in the State is seriously handicapped. The campaign against the disease must be widely supported by the profession if it is to be in any degree successful, must indeed be an expression of the united wisdom of the profession. It is urged, therefore, that the following description of the work of the Virginia Cancer Foundation and of its relation to both the lay and medical world be carefully read and digested by every member of the Medical Society of Virginia.

The physicians active in the campaign, and particularly those that comprise the Cancer Committee of the Medical Society of Virginia, recognize that many steps in any cancer control campaign are experimental. Mistakes will be made and doubtless many have been made. Individual rights may seem to have been invaded and individual susceptibilities may have been wounded. For that reason there is published as an insert in this issue a questionnaire intended to uncover mistakes and to learn from sources of wisdom not yet tapped. It is requested that every member of the Society, after familiarizing himself with the below data, fill out and mail the questionnaire according to the instructions there given.

GENERAL CONSIDERATIONS

The Virginia Cancer Foundation was incorporated in 1938 under the laws of the State of Virginia as a non-profit corporation. Wisely its founders provided for its activity in any form of work directed towards the control of cancer, including the establishment of research institutions and hospitals for the treatment of cancer. This extended program is, of course, a matter for the future. As a start towards the control of cancer in the State, the Foundation has begun with what have seemed the most urgent necessities, namely, the medical care of cases of cancer which present some hope of cure and the education of the lay public in the prevention and the early detection of cancer. Other objectives must soon be considered if the Foundation is to go forward as an effective instrument against cancer.

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The duties and privileges of the two groups interested in the control of cancer, namely, the profession and the laity, have been weighed in developing the organization. After some experience, the Foundation recognized that at its inception the dominant place of the medical profession in the control of cancer had, perhaps, not been sufficiently appreciated. Through alterations in organization this possible fault has now been corrected to a degree that is believed to be adequate.

The Board of Trustees consists of a mixed group of lay and professional individuals of which 40 per cent may be physicians. The By-Laws state that the appointment of any physicians to the Board of Trustees shall be made on recommendation of the Cancer Committee of the Medical Society of Virginia. This Committee has interpreted this provision so as to include not only a group of physicians who are interested in cancer, but also the personnel of the entire Cancer Committee of the State Society. In other words the proceedings of the Board of Trustees are under the direct supervision of the Medical Society of Virginia. Although no controlling vote is given to the profession in the Board of Trustees, the obvious preponderance of authority and interest that the medical profession will exercise over its deliberations, is expected to outweigh the numerical minority. It was felt that the lay group involved might lose interest if the organization were made predominantly medical.

The function of the Board of Trustees is largely that of establishing general policies, of assuming responsibility for possible funds of the Foundation, and of reviewing and endorsing the actions of its Executive Committee. It has the usual complement of officers with the addition of a Director, who must be a physician, and who acts as Chairman of the Executive Committee. It also is provided with a Finance Committee to which is delegated the authority for the care and investment of endowment funds, the accumulation of which is of course one of the early major projects of the Foundation.

The association between the medical profession and the Virginia Cancer Foundation is made still closer by the fact that the active body, namely, the Executive Committee, is appointed by the President of the Foundation upon the recommendation of its physician-director. This body meets several times a year and is empowered to commit the Foundation to

policies and procedures while the Board of Trustees is not sitting. Its membership at present includes, and is intended permanently to include, the entire membership of the Cancer Committee of the State Society.

Through agreement with the American Society for the Control of Cancer, the national organization devoted to similar aims, the Virginia Cancer Foundation represents that body in Virginia. Its Director is the Chairman of the Virginia Section of the American Society for the Control of Cancer. Through this affiliation, the Virginia Cancer Foundation is related to the nation-wide effort. More particularly, it is thereby able to command the services of experienced speakers on cancer and to obtain literature designed for the education of the laity at relatively slight expense.

Any campaign against cancer must unite education of the lay public in regard to cancer with improvement in the facilities for its treatment. A third essential is the provision of funds for the accomplishment of these ends. Unlike most charity enterprises efforts to raise money can be, and, under the precedent of the American Society for the Control of Cancer, are combined with the educational campaign. The Virginia Cancer Foundation has adopted a program in which education and the provision of funds by public subscription are associated. An effort is made to continue this program throughout the year; but the culminating activity occurs in April of each year which the American Society for the Control of Cancer devotes to a national educational campaign as Cancer Month. The State campaign is carried out by an additional officer, paid by the Foundation, namely, the Financial Director. This individual is appointed also by the American Society for the Control of Cancer as its State Commander of the Women's Field Army, which is the organization devoted throughout the country to these two purposes.

From the money raised during the educational campaign a proportion to be further discussed is devoted to education during the ensuing year, most of the remainder being allotted for the care of indigent cancer patients.

One further policy of the Virginia Cancer Foundation should be noted. The Foundation has felt that it could not justifiably ask for public support unless it could affirm that within reasonable limits publicly subscribed money spent for the care of in-

igent cancer patients is properly spent. At the suggestion of the Cancer Committee of the Medical Society of Virginia, it has, therefore, agreed to spend such funds only at institutions of which the Medical Society of Virginia could approve as having the equipment and personnel that make proper treatment possible. The Cancer Committee of the Medical Society of Virginia has established a set of minimum requirements (see VIRGINIA MEDICAL MONTHLY, September, 1940, page 564) which must be met. To institutions meeting these standards and applying for the treatment of patients from publicly subscribed funds (and only to such institutions) will the Virginia Cancer Foundation send patients for treatment. In all public statements in this connection it has been made clear that institutions not so accredited are not thereby adjudged necessarily incapable of treating cancer. Six medical centers have applied for certification and have been certified, but there are many more in the State, which either have not been interested in treating indigent patients, or for some other reason have not yet applied, all of which are undoubtedly offering adequate treatment of the disease. An effort is being made to assure the geographic spacing of accredited clinics so that no patient need travel any long distance to be assured of treatment.

In summary then, the Virginia Cancer Foundation is an organization under the direct supervision and partial control of the Medical Society of Virginia, which is attempting to begin an effective attack on cancer in Virginia. This attack consists of a campaign of lay education, the expenses of which are borne by money publicly subscribed during a campaign which combines efforts to obtain money with the educational program itself. In addition it attempts to furnish funds for the treatment of indigent cancer patients at properly accredited centers. Its work is closely affiliated with the national effort represented by the American Society for the Control of Cancer, of which it is the Virginia representative.

EDUCATIONAL PROGRAM

For those physicians, whose opinion, either critical or commendatory, the Cancer Committee of the State Society is anxious to obtain, it is necessary to present in some detail the past experience and the current operative methods of the Foundation, as well as its broad general program. Insofar as the educational campaign is concerned, little detail need be given. Through the activity of the Commander of

the Women's Field Army, the State is organized in districts which are further subdivided into cities and counties. In each of these subdivisions a representative of the Women's Field Army is appointed whose duty it is to arrange public addresses, radio talks, moving picture presentations and the distribution of printed educational material prepared by the American Society for the Control of Cancer and delivered from the central office. There is being developed throughout the State a Speakers' Bureau on which these women may call for addresses by physicians to lay audiences. The Cancer Committee of the State Society is grateful to all physicians who have given such talks and who may be asked in the future to serve.

The activity of these local units depends, of course, entirely upon the interest and enthusiasm of the local representative of the Foundation. It has not been an easy task to find women everywhere who can and will work equally vigorously and tactfully. The physicians of the State need not be reminded that many of these women have had no extended contact with the profession and are not familiar with the reasons for certain professional points of view. Unquestionably antagonisms have arisen from lack of understanding on the part of some of the local representatives. It would be helpful if instances in which physicians were embarrassed were to be reported to the Cancer Committee of the Medical Society of Virginia. Such a proceeding would tend to further the cause of cancer control in Virginia more successfully than to condemn the efforts of the Virginia Cancer Foundation on the basis of mistakes which it is hoped are isolated. The physicians of the State may be assured that the Director of the Virginia Cancer Foundation is making every effort to minimize such occurrences and to clarify misunderstandings.

It is natural that the chief educational effort of the Virginia Cancer Foundation should be synchronous with that of the national body; namely, that April should be cancer month in Virginia as it is in other states. On the other hand, as the State organization becomes more accustomed to its activities, it is hoped that educational efforts will be made throughout the year. In certain communities the educational campaign has been completely overshadowed by local charity drives of longer standing. In such instances it is possible that the efforts of the Virginia Cancer

Foundation can culminate during some other month; and in several instances this has already been done.

PROGRAM FOR FURNISHING TREATMENT TO INDIGENT PATIENTS

The efforts of the Virginia Cancer Foundation in relation to the care of the indigent cancer patient are complex. They comprise several factors: (1) the furnishing and allocation of funds, (2) the choice of type of patient to be benefited, (3) the mechanism of bringing the patient into relationship with the Foundation, (4) the furnishing of adequate treatment, (5) proper records both financial and clinical.

1. Money to be applied to the care of indigent cancer patients is derived from the funds collected during the educational campaign. In general the total amount collected is applied to four needs. The first is the Virginia share of the support of the American Society for the Control of Cancer. Ordinarily the state divisions of this organization are required to pay 30 per cent of all collections in the state to the American Society for the Control of Cancer. On account of the origin of the Virginia Cancer Foundation as a separate body from the American Society for the Control of Cancer, the latter has generously allowed the establishment of a particular arrangement in Virginia different from that elsewhere. The cost of membership in the Virginia Cancer Foundation is one dollar. Thirty per cent of this goes to the national office in New York; but if any larger sum is given, the first dollar only is considered as a membership and thirty cents is allocated to the national office. During the two years in which this arrangement has been in effect, the amount sent to New York has been almost exactly 15 per cent of the total collections in each instance. This amount is returned to the Virginia Cancer Foundation in kind through the furnishing of educational material at cost, free publicity material and the availability of experienced speakers for meetings in the State.

The remaining 85 per cent is budgeted by the Executive Committee of the Virginia Cancer Foundation for (a) the support of the office of the Foundation, (b) the educational campaign and (c) the care of indigent cancer patients. In the fiscal year 1939-40, 50 per cent of this remainder was used for the care of indigent cancer patients and during the current year this proportion has been raised to 65 per cent, amounting to \$8,440.41. No remuneration

is paid to any physician serving either in an administrative capacity or in the care of patients.

In the hope that more interest would be taken in the money-raising campaign and that greater sums might thereby be obtained, the Foundation early established the principle of allowing available money to be spent only on patients from the locality in which it was raised. In view of the facts that first, many localities raised nothing and many too little to apply to the care of indigent cancer patients; second, that numbers of appeals had to be turned down for these reasons; third, that other localities did not make use of the entire sum available; and fourth, that thereby a considerable surplus of unused money was available at the end of the last fiscal year, the Executive Committee of the Foundation has modified this policy so as to permit the allocation at the end of each fiscal year of any locally unused funds for use anywhere in the State. This means that the patients from poor counties need no longer be neglected by the Foundation. This sum will first become available on July 1, 1941.

At the present time the Foundation is faced with a situation which the doctors of the State should know. In spite of assuming financial responsibility for the treatment of every case which comes under the provisions to be detailed below, it is possible that a considerable amount of the money allocated for this purpose during the last two years will not be spent. The Director does not believe that this situation is due to a lack of cancer cases that should be treated; it is more probable that it is due to a combination of patient ignorance and lack of appreciation by the profession of the State that this service is available. Having yet no considerable central fund for use anywhere in the State, it is possible that during the present fiscal year, up to July 1, 1941, applications may still have to be refused, but it is hoped that beginning on July 1, 1941, every appeal can be met.

2. The regulations under which the money is spent on patients from the localities in which it is raised, represent policies to which the Foundation has given considerable thought. It has been recognized from the start that the fundamental aim of the Foundation is the diminution of deaths from cancer and not the broader aim of diminishing human suffering when cancer is the cause. The latter seems to be the duty of less specialized organizations, such as local welfare bodies and churches. It is quite

QUESTIONNAIRE

If after reading the accompanying article on Cancer Control in Virginia, you have criticisms or suggestions which might be helpful to the Cancer Committee of the Medical Society of Virginia, please use the below form or a letter. If you have no criticisms or suggestions you are urged to send a favorable reply. The Cancer Committee of the Medical Society of Virginia can thereby judge how whole-heartedly the profession is behind their efforts.

Please fill out and mail as soon as possible to

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1. Do you approve of lay education in regard to cancer? -----
2. Do you approve of a campaign to raise money for the care of indigent cancer patients? -----
3. Do you approve of the methods of the Virginia Cancer Foundation to accomplish these aims? -----
4. If you answer any of the above questions in the negative, please give your reasons.
5. If you approve in general, please offer suggestions which might increase the effectiveness of the work in the State or in your locality.

obvious that the available funds of the organization could be rapidly dissipated if they were to be applied to the hospitalization or the palliative treatment of the dying cancer patient, without subtracting at all from the number of cancer deaths. For that reason the Foundation has established the rule that funds should be spent only for the care of patients in whom the disease is not obviously hopeless. It has, therefore, not accepted cases with distant metastases, with ascites or other evidences of hopelessness. On the whole, however, the rule has been liberally interpreted in that cases have been accepted with any degree of local spread or regional metastasis. Furthermore, the Foundation has accepted the responsibility for the treatment of cases once previously treated no matter how hopeless the later state may be. These conditions, together with the obvious requirement that the patient should be certified by local agencies as being definitely indigent, are the only rules of choice of patients.

3. The mechanism by which such patients are brought into relationship with the Foundation is often cumbersome, but in certain instances it has been possible to modify it so that quicker action is obtained. The cancer case may come to the attention of the local physician, the local representative of the Virginia Cancer Foundation, the welfare worker, the health officer or any other individual in the community. Whoever becomes aware of the existence of such a case may write directly to the Executive Secretary of the Virginia Cancer Foundation to receive instructions. Preferably, however, he or she will approach the local representative of the Virginia Cancer Foundation, who will then investigate the case from two aspects; first, as to the presence of proven or suspected cancer and second, as to indigency. She will then arrange to have the patient examined at the nearest certificated cancer clinic. In the event that cancer is present or is suspected, this clinic will notify the central office, which will by that time have heard from the local representative as to the patient's indigency. On the basis of this information authorization for diagnosis and treatment under the auspices of the Foundation will be promptly forwarded. In order for the Virginia Cancer Foundation to be certain that money is not being spent when it is unavailable, it is important that the approval of the case should go through the Director's office, before treatment is instituted. With prompt action on the part of everyone concerned this mech-

anism can usually be made effective and treatment can be started within four or five days. In the case of emergencies, such as severe uterine bleeding, authorization will be given after treatment has commenced. It is important that the doctors of the State know how to obtain help from the Virginia Cancer Foundation in their indigent cancer problems. Briefly, if the physician knows the local representative of the Virginia Cancer Foundation, he should approach her. If he does not know who this may be, he should write to Miss Eleanor McK. Gibson, Executive Secretary of the Virginia Cancer Foundation, University Hospital, Charlottesville, Va. If this latter method is followed, it is urged that certain minimal data be included so that the Director may have some conception of the problem. The age, sex, and race of the patient and the site of the cancer should be furnished as well as the city or county of residence and the patient's financial status.

4. After diagnosis and treatment have been authorized the next problem of the Virginia Cancer Foundation is the assurance to the patient and to the donors of funds that such diagnosis and treatment will be adequate. As stated above the Foundation has put this problem in the hands of the Medical Society of Virginia through its Cancer Committee and has agreed to furnish funds for treatment only at centers certificated by that body under previously published standards. At the time of writing six such clinics have been certified, as follows:

Diagnostic Tumor Clinic, 306 West York Street, Norfolk, Va.*

McIntire Tumor Clinic, University Hospital, Charlottesville, Va.

Petersburg Tumor Clinic, 30 Franklin Street, Petersburg, Va.

Tumor Clinic, Elizabeth Buxton Hospital, Newport News, Va.

Tumor Clinic, Jefferson Hospital, Roanoke, Va.

Tumor Clinic, Medical College of Virginia, Richmond, Va.

*In spite of its title, this clinic is accredited for treatment as well as diagnosis.

It is believed that others will be certified within a few months. Doctors can, of course, refer indigent patients directly to these clinics, but such a procedure is apt to cause confusion and delay, as the physicians at the clinic will have had no authority from the office of the Foundation for the treatment of the particular patient and will not know whether funds are available.

The Virginia Cancer Foundation has protected

its funds through establishing a standard set of costs for cancer care. These have been made possible by the whole-hearted cooperation of each of the certificated clinics and they represent a definite financial contribution on the part of the clinics to the cancer control program. The associated hospitals have in every instance agreed to hospitalize patients at a flat rate of \$3.00 a day including all hospital charges, a sum which, of course, in few hospitals covers the patient-day cost. The radiological departments have agreed to give a complete course of deep therapy at a maximum cost of \$25.00, with a shorter course at a proportionate rate. Lastly, the clinics have agreed to the use of radium with no cost. This means that in a consecutive series of thirty-six cases treated the average cost per patient to the Foundation was only \$40.84.

In order to be more effective in diminishing cancer deaths the Executive Committee has established the policy of assuming the cost of diagnosis in cases in which cancer is suspected, although not proven, provided the opinion that cancer can not be excluded is concurred in at a certificated clinic. An extreme example of this type of expenditure is that for hospitalization in the case of a suspected cancer of the stomach to be excluded only by exploratory laparotomy.

No charges for home care, for dressings or drugs, or for transportation to and from the clinics is assumed by the Foundation. When ambulatory patients are receiving X-ray treatment at certificated clinics not in their home communities, the Foundation has assumed the cost of board and lodging during the period of treatment.

5. Lastly, an object of the Foundation has been to publicize its proceedings and its financial policies as completely as possible. The proposed use of subscribed money has so far as possible been predicted during the campaigns to raise money; and after the close of each fiscal year a detailed statement covering the actual financial transactions of the previous year has gone out to every local representative of the Foundation. This has included a complete balance sheet stating (1) the previous year's balance, (2) the total collections, (3) the sum paid to the American Society for the Control of Cancer and the percentage of the total income that it represents, (4) expenditures for the operation of the office of the Foundation, (5) expenditures for the educational campaign, (6) the amount spent for indigent can-

cer patients, and (7) the balance remaining at the end of the year divided in accordance with the budget. In addition data concerning the indigent patients treated are reported, together with the average cost. With this report is sent a copy of the regulations for the care of indigent cancer patients and a diagram showing the organizational pathways through which patients must pass to benefit from the services of the Foundation.

In order to complete properly such a report an elaborate system of records has been established in the central office. These include a separate financial statement for every locality which has shared in the cancer control campaign, an individual folder and card in the files for each patient treated, as well as the ordinary minutes of the Executive Committee meetings and account books. These records are open to the inspection of any interested individual. All financial records are audited at the close of each fiscal year by a certified public accountant.

One other record is kept which is not specifically the function of the Virginia Cancer Foundation but rather that of the Cancer Committee of the Medical Society of Virginia. For each case treated there is placed in the file of the latter body, a report to be filled out by the Director of the clinic on a specially prepared form, including clinical data with signed opinions of the surgeon, the radiologist and the pathologist. This record has a twofold purpose. It enables the Cancer Committee of the Medical Society of Virginia to obtain some idea of the character of the treatment given at the accredited centers. In addition it is hoped that possibly significant data on a large group of cases of cancer can ultimately be obtained.

CONCLUSION

The general problem faced by the Virginia Cancer Foundation and by every physician in the State is immense and will so remain until the cause or causes of cancer are most clearly defined and specific therapy becomes available. In the meantime it is clear to all physicians that the diminution of the number of deaths from cancer depends at the least upon the two approaches which the Virginia Cancer Foundation is now making, namely, education in regard to the disease and improvement of the facilities for treatment. So long as lay individuals are ignorant of the symptoms of cancer or fear treatment more than they fear the disease, the provision

of improved opportunities for treatment is relatively useless. The two activities must go hand in hand.

It is recognized that a program of lay education on any medical topic carries with it certain disadvantages, which are perhaps seen in their most exaggerated form in education about cancer. The danger of creating cancerphobia cannot be overlooked. Whether or not a seriously intense element of fear will follow lay cancer education depends on two factors, namely, the type of person educated, and the type of education. There is a large group of individuals who live in a fear-state constantly. It is probable that most of these people live in fear of cancer just as they live in fear of economic disaster and of personal injury. It can be doubted that the presentation of known facts about cancer will always be harmful to this group. Certainly a number of people whose fear of cancer is engendered by complete ignorance of the disease will be convinced that their fears are unjustified. In any general statement about this problem one cannot be dogmatic in relation to the individual. No doubt some people will be harmed; but if certain of those same people are prevented from dying from cancer, the additional fear might be a price worth paying. If that fear drives them to a doctor, who can reassure them of the absence of cancer, it may evaporate.

The other element depends upon the physician's approach to the problem in presenting it to the lay world, either individually or in groups. The doctor can point out that cancer is only one of many hazards of living and that the ordinary individual does not live in constant fear of all the dangers of living. He takes such precautions as protecting himself from infection following a wound, from a rickety ladder and from the hazards of driving an automobile, without the intense emotional reaction which is often

associated with the fear of cancer. After all, a tactful physician can teach the simple precautions against cancer and the suspicious symptoms that may indicate cancer without implanting in the minds of his hearers the idea that they are probable immediate victims.

No matter what may be said theoretically about this problem, the experience of the American Society for the Control of Cancer and of most practicing physicians indicates the value of the educational campaign. In a recent conversation with a physician from a state where much more active education has been carried on than in Virginia, the remark was made that the incidence of late cancer of the breast had very definitely diminished. As a result of three years of cancer education in Virginia, the number of patients that are coming for reassurance in regard to cancer is increasing. In some of these, of course, cancer is found in an early stage. The full proof of the value of cancer education in Virginia will come later, if through active educational efforts over a period of years, the incidence of cancer deaths in Virginia is favorably affected. It does not seem logical to refuse to support this experiment on the theoretical grounds that a few people will be hurt. It becomes increasingly clear that if the sum total of the nation's educational campaign against cancer were harmful there would be a definite tendency to diminish efforts, rather than the opposite tendency which now exists.

In conclusion, the Cancer Committee of the Medical Society of Virginia and the Virginia Cancer Foundation ask the enthusiastic support of the profession and the benefit of its wisdom in their attempts to diminish cancer deaths in the State. It is ultimately, to repeat, the doctor's job; and these organizations exist to help him.

EFFECTS OF QUININE AS A PROPHYLACTIC VERSUS INFLUENZA AND PROBABLE REASON.*

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My attention was first attracted to the use of quinine in diseases of the respiratory tract in 1907, while an interne at St. Vincent Hospital, Norfolk,

Virginia, where some of the staff men used large doses of quinine sulfate in the treatment of pneumonia, with apparently gratifying results. Following this, I used quinine a great deal in the treatment of pneumonia and it appeared to me that the results

*Read before the Montgomery County (Va.) Medical Society, September 25, 1940.

were better than any drug available, until the advent of serums and more recent drugs.

During the epidemic of influenza in 1918, I *personally* had occasion to try 30 grains daily after breakfast, while running a temperature of 103 and 104, and was surprised to find that I not only felt better after taking these doses, but my temperature came to normal at the end of seventy-two hours and I did not miss a day's work, or suffer any ill consequences as a result of the treatment or disease. Having no intelligent answer to give to the question asked by the *public* many times a day, how to prevent influenza, and having twelve employees in the small hospital I then operated, all young people and apparently easy victims to this particular epidemic, I decided to try quinine as a prophylactic. I ordered every one of the twelve to take 10 grains quinine sulfate as a prophylactic, daily after breakfast, except those on night duty, and they in turn were to take the same amount after the evening meal. The result was so startling that I have been following the idea ever since in my practice. While practically every business of any kind in our community was closed out on account of illnesses and deaths, not one of our employees ever took the "flu" at any time and not a day was lost from work. Whether this would be true in any other epidemic of influenza I do not know, but if one ever occurs in this community I will certainly try this again unless in the meantime a safer and better means is found.

The results obtained in the treatment of influenza with quinine outside of my own case were not satisfactory, because by the time I found out this much about the disease and treatment, the epidemic had reached such proportions that a patient seldom lived long enough to give any treatment satisfactorily. In those that did live as long as a few days, however, the results appeared to be good. However, it was with the *contacts* that I felt assured we obtained the best results. I prescribed quinine as a prophylactic to hundreds of cases during the late stage of this epidemic and as far as I was able to determine very few of those who took quinine as directed took influenza, and if they did the disease was rather mild. I am unable to say if there were any deaths, on account of the rush, and we had little time to make detailed study as to why these results were obtained.

Knowing, however, that the first thing that happened with a person stricken with "flu" was a rapid

and marked *leucopenia*, it occurred to me that the quinine probably had its good effect by increasing the white cell count. With this thought in mind, I have on numerous occasions during the past twenty-two years used quinine for diseases of the respiratory tract, especially where the white count was normal or below, and wherever I have been able to follow up these cases there has been almost a universal increase in the white cell count, with marked improvement in the clinical condition of the patient.

My idea in using quinine in the morning instead of during the day or at night is suggested by the stimulating effect of quinine, which lasts over a long period of time, about twelve hours, and is generally followed by a reaction during the next twelve hours. This, in my opinion, is particularly important for patients who are up and about, to prevent taking fresh cold or extension of trouble in the respiratory tract.

In order to further clarify this point, I wish to submit the following report of work done in the Clinic of the New Altamont Hospital, Inc., Christiansburg, Virginia, during the years 1939 and 1940.

Group A. Radford College, by Dr. Fitzpatrick and Miss McCraw—

	TOTAL W. CELLS	AVERAGE W. CELLS
BEFORE QUININE		
11/14/39—12 pts.	113,450	9,454 plus
11/21/39—11 pts.	115,350	10,486 "
11/28/39— 8 pts.	76,150	9,518 "
Summary 31 Counts—Total	304,950	9,837 "

Group A. After 3-5 gr. Quinine Sulphate Daily, A.M., P.C.

	TOTAL W. CELLS	AVERAGE W. CELLS
AFTER QUININE		
12/18/39—8 pts.	103,950	12,993 plus
1/ 4/40—9 pts.	94,250	10,472 "
1/13/40—8 pts.	80,050	10,006 "
Summary 25 Counts—Total	278,250	11,130 "

Group B. Christiansburg Industrial Institute from November 29, 1939, to January 11, 1940.

	TOTAL W. CELLS	AVERAGE W. CELLS
BEFORE QUININE		
11/29/39—50 pts.	350,600	7,012 plus
12/ 6/39—50 pts.	400,700	8,014 "
12/13/39—53 pts.	455,600	8,596 "
Summary 153 Counts—		
Total	1,206,900	7,888 "

Group B. After 3-5 gr. Quinine Sulphate Daily A.M., P.C.

	TOTAL	AVERAGE
AFTER QUININE	W. CELLS	W. CELLS
12/20/39—49 pts.	399,800	8,159 plus
1/ 4/40—38 pts.	318,200	8,373 "
1 11/40—38 pts.	318,100	8,371 "
Summary 125 Counts—		
Total	1,036,100	8,288 "

Group C. New Altamont Hospital—11/15/39 to 12/20/39.

	TOTAL	AVERAGE
BEFORE QUININE	W. CELLS	W. CELLS
11/15/39—23 pts.	161,900	7,037 plus
11/22/39—24 pts.	197,550	8,231 "
11/29/39—23 pts.	188,000	8,173 "
Summary 70 Counts—Total	547,450	7,820 "

Group C. After 3-5 gr. Quinine Sulphate Daily A.M., P.C.

	TOTAL	AVERAGE
AFTER QUININE	W. CELLS	W. CELLS
12/ 6/39—21 pts.	190,200	9,057 plus
12/13/39—16 pts.	131,950	8,246 "
12/20/39—13 pts.	107,000	8,230 "
Summary 50 Counts—Total	429,150	8,583 "

Statistical comments on white cell counts incident to use of quinine: These people had 3-5 grains after breakfast daily, depending upon their susceptibility.

1. A study during the months of March and April, 1939, of 10 cases shows the following—

Average first count before Quinine	
of 10 cases -----	7,340
Average first count week after 5 gr.	
Quinine daily A.M., P.C.-----	8,990—Increase 1,650

Average first count of 3 weeks

Quinine treatment as above----	8,666—Increase 1,326
Polymorphonuclear count in this group of 10—	
count before Quinine-----	average 59.5
Polymorphonuclear count in this group of 10—	
1 week after Quinine-----	" 59.4
Polymorphonuclear count in this group of 10—	
3 week average after Quinine-----	59.87

2. These groups studied November 15, 1939—January 15, 1940, over a period of 3 weeks before and 3 weeks after Quinine administration show the following facts:

85 patients averaged 1 week before	
Quinine a white cell count of----	7,364
78 patients averaged 1 week after	
Quinine a white cell count of----	8,896—Increase 1,532

Of this group 254 counts before

Quinine—over 3 weeks period,	
average -----	8,107

Of this group 200 counts after

Quinine—over 3 weeks period,	
average -----	8,717—Increase 610

3. Below a study of 21 cases from January 15, 1940—May 1, 1940, these patients having one count only before Quinine and 2-3 counts after administration of 3-5 grs. Quinine daily after breakfast—results follow:

Average count before Quinine of 21	
cases -----	8,304
Average count after 1 week Quin-	
ine, 21 cases -----	9,840—Increase 1,536

Average count for 3 weeks Quinine

17 cases -----	9,116—Increase 812
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It is rather significant to note that in these three different groups made at different times the first week increase after use of Quinine is so uniformly the same:

1st group an increase of -----	1,650
2nd group an increase of -----	1,532
3rd group an increase of -----	1,536

While over the 3 weeks period there is a rather sharp discrepancy between the first and last two as follows:

1st group after 3 weeks average-----	1,326
2nd group after 3 weeks average-----	610
3rd group after 3 weeks average-----	812

The differential count was made only in the group of 1939, or first group, and it is significant where there was a variation either up or down in the polymorphonuclear count, the small lymphocytes either increased or decreased, according to decrease or increase of polys. The differential count averages practically the same in all counts, as schedule shows.

Second Group: November 15, 1939—January 15, 1940. Eighty-five cases studied over a period three weeks before and three weeks after use of 3-5 grains quinine daily A.M., P.C. This survey was made in three groups, namely: One, Radford College, Radford, Virginia.; One, New Altamont Hospital Clinic, Christiansburg, Virginia; The other, Christiansburg Industrial Institute (col.), Christiansburg, Virginia, in order that we might make a comparison of the several different groups of life. It is interesting to note that the average in all three groups of the first count made, compared to the average over three weeks, were as follows: first—9,454 vs. 9,837; second—7,012 vs. 7,888; third—7,037 vs. 7,820. First group also shows count before quinine 9,454 vs. 12,993 count one week after quinine was started; second groups shows count before quinine 7,012 vs. 8,159 count one week after quinine was begun; third group shows count before quinine 7,037 vs. 9,057 count one week after quinine was begun. It should be observed in groups one and three, white people, there was an increase of about $33\frac{1}{3}$ per cent in group one, from the first count before to first count after

quinine; and about 30 per cent increase in group three; while in group two of colored people there was an increase of about 16 per cent.

The following figures show complete details of our observations, with exceptions:

Third Group: January 15 to May 1, 1940. Three-five grains quinine daily A.M., P.C. shows twenty-one cases studied, one count only being made before quinine was started, and three after. First count before quinine 8,304 vs. first count after quinine 9,840, an increase of nearly 20 per cent; while the average over three weeks was 9,116, showing an increase over first week before (8,304), vs. 9,116 average after, about 10 per cent.

June 1, 1940: In answer to an inquiry, of the 123 patients above reported, we find

- 54 had no cold or "flu";
- 42 had cold or "flu" but lost no time;
- 15 had cold or "flu" and did lose a few days time;
- 12 failed to report.

123

None of the 112 cases reporting advised having pneumonia or serious complications.

Comments on effects of quinine in sickness and health, by medical authorities with reference to bibliography.

Bastedo¹ says: "In ordinary therapeutic doses of quinine, there is probably a slight increase in the rate of the heart and a tendency to rise in the blood pressure, from mild stimulation of the heart muscles and of the arterial muscles."

Quinidine, an alkaloid of cinchona, is said to have the same effect on the heart muscles as a stimulant, but more marked than quinine.

Cecil's textbook of Practice of Medicine² has this to say with reference to influenza: "There is a leucopenia in most cases."

Osler-McCrae's Practice of Medicine³ on the subject of blood picture in cases of influenza, has this to say: "During the epidemic of 'flu' in 1918, leucopenia was the rule in broncho-pneumonia."

Geo. B. Roth,⁴ University of Michigan, has, in substance, this to say: "Gives brief history of work by Binz, Wilkinson and Askenstedt and then shows by his own experiments that the effects of quinine in ordinary therapeutic doses produces—1. A leucocytosis, with increase of lymphocytes coming on shortly after administration, thought to be due to contrac-

tion of the spleen and other blood harboring structures; 2. An hour or two later a leucopenia occurs, mostly from reduction of lymphocytes; 3. Following shortly after the second, there is a leucocytosis, mostly an increase of polymorphonuclears—adding that the leucocytosis may come from the chemical stimulation of disintegrated white blood cells of the body on the blood forming organs."

Wilford H. Manwaring and Harold O. Ruh,⁵ on the subject "The effects of certain surgical antiseptics and therapeutic agents on phagocytosis—carbolic acid—mercuric chlorid—boric acid—quinine hydrochloride"—says: "The addition of quinine hydrochloride gives from the first an increase in phagocytosis, reaching a maximum (20 per cent), with a concentration of 1/200 per cent; reduces to normal with concentration of 1/120 per cent; ceasing entirely when concentration of 1/40 per cent is reached."

Public Health Reports⁶ contains reports of polymorphonuclear increase in bronchial areas of mice inoculated with influenzal virus.

Use of quinine in surgery and obstetrics by Welcker and Smit⁷ present a series of practical observations on the apparently universal value of quinine as a prophylactic and curative agent in treatment of influenza.

U. S. Disp., 22nd ed.:⁸ Quinine causes a pronounced leucocytosis when taken in ordinary therapeutic doses.

Dr. Winkel's reference⁹ to observations of Hughes and Shrivastava states, with reference to, the use of quinine in malarial patients, that "There was at first an increase in the total number of leucocytes, mostly mononuclears, followed by leucopenia, which again disappears when quinine treatment is resumed."

Lemetayer,¹⁰ on the subject: "Action of quinine on leucocytosis and the production of specific antitoxin in horses during antitetanic hyperimmunization" concludes that "The leucocytosis which he shows occurs in normal horses taking quinine does not oppose leucocytosis in horses subjected to hyperimmunization with tetanus toxin * * *."

Fritz Johannessohn¹¹ on the subject: "Action of quinine on the blood," states that use of quinine hydrochloride .3 gm. daily with .9 gm. on every seventh day for protection vs. malaria—examinations every eight to ten days for four weeks—followed by some quinine free-weeks, to be followed by a second period of quinine treatment, which was consid-

erably longer, found that certain individuals had no alteration in leucocyte counts, either in first or second periods, while in other cases there was a definite decrease in number of white cells. When quinine is discontinued, the cell count gradually returns to normal in two to three weeks, the decrease to low point requiring three to four weeks quinine treatment. If, however, small doses—.3 grm. quinine—are given to those patients showing a decrease, the number of white cells slowly returns to normal. Of approximately 1,000 cases treated, 300 showed leucopenia, while 700 did not.

From the Department of Research in Pure Chemistry, Mellon Institute of Industrial Research, Pittsburgh, Pennsylvania, by C. L. Butler, W. L. Nelson, Alice G. Renfrew and Leonard H. Cretcher,¹² we note the statement: "Many physicians' believe that the best way to treat pneumonia is by attacking the pneumococcus directly." From their experiments they show that hydroxyethylhydrocupreine sterilizes pneumococci *in vitro* in a concentration of 1:200,000, and that it is far less toxic than optochin (ethylhydrocupreine) and highly efficient in protecting mice again pneumococcal infection. See Bibliography 11.

Professor Kalk,¹³ together with Professor Von Bergmann, of Berlin, observed 2,000 cases of pneumonia by parenteral use of quinine-calcium and a decrease in mortality is shown from 23 per cent to 16 per cent, while in the Army Hospitals the decline in mortality had been from 9.8 per cent to 4.9 per cent. Out of 60,000 injections of quinine-calcium, there were only seven cases of local abscesses. He thinks the results of quinine-calcium treatment of pneumonia have been much better than those treated with pneumonia serum. (Quinine-calcium for parenteral use by Sandoz Chemical Co., New York)—See Bibliography 12.

Arthur MacDonald¹⁴ describes a large English boarding school at which the Head Master had all the pupils given two grains of quinine every morning, with the result that there was practically no influenza among them, whereas the day pupils to whom no quinine was given suffered very much from this illness. Another example is that of a girls' school, in which all the girls were given two grains of quinine every morning, and the servants were not given any. Result: hardly any cases of influenza among the girls, while all the servants came down with it.

Dr. A. H. Dodd,¹⁵ having tried one or two grains

of quinine daily in morning for himself, was so well pleased with the results that he recommended its use in a boarding school during one of the worst influenza epidemics ever known; there was not a single case of it at the school.

Dr. F. Scheitz¹⁶ believes that the good effect of quinine in preventing influenza is due to the vasodilatory effect on the mucous membranes, thereby heightening the power of self-protection in the tissues.

Professor K. Laubenkeimer¹⁷ states that quinine has proved itself a prophylactic, upon the effectiveness of which one can rely. During the year 1918 he noted during that epidemic 1,000 prisoners of war were kept almost entirely free from the disease while taking four grains quinine daily, and during the same time a number of those not treated were very sick.

Berger,¹⁸ observing effects of four grains quinine twice daily on a group of 173 nurses combining the quinine with an equal amount of sodium salicylate, states the results were so good that practically no new cases occurred after the treatment was begun, even though the epidemic had not as yet reached its maximum severity. Also, the cases that did occur after taking the drug were much less serious. He further notes that malarial patients taking quinine are not attacked by influenza.

Vico¹⁹ mentions an influenza epidemic which broke out in a hospital in Italy, and to which all persons connected with this institution succumbed, with the exception of 400 malaria patients, who were under the influence of quinine.

Gladstone²⁰ states that after fifteen years experience with quinine for influenza he considers it as much a specific for influenza as it is for malaria. During the 1918 epidemic he gave two grains every two hours and found the results very striking. Cases that were stuporous became quite bright in twenty-four hours after taking two grains every two hours.

Alexander Sterling,²¹ in an article on "Quinine as a prophylactic and specific for influenza," expressed the wish that the health authorities would make dosing with quinine on a large scale compulsory during an influenza epidemic.

From the above observations, therefore, we may conclude:

First: Quinine has a definite stimulating effect upon the muscles of the heart and arteries, when taken in proper therapeutic doses.

Second: Quinine has a definite effect upon the white cells of the body—(1) an increase due to a higher per cent of lymphocytes, coming on rapidly; (2) a return to normal with polys remaining about the same in both periods; (3) a leucocytosis with increase in polys; (4) a leucopenia if continued over several (three to four) weeks' time, or in too large doses; (5) a slow return to normal after quinine is discontinued (two to three weeks), which return to normal is hastened by use of small doses of quinine.

Third: Influenza produces a definite and rapid leucopenia, especially in severe forms, including broncho-pneumonia from influenza.

Fourth: Extensive use of quinine particularly as a prophylactic in "flu" has given splendid results.

Fifth: It has been noted people taking quinine for malaria, when subjected to an epidemic of influenza, seldom ever take the disease.

If, then, you compare the leucopenia caused by influenza *vs.* the leucocytosis caused by quinine, both in the early period of infection or use, the answer appears reasonable that the increase of white cells caused by quinine has a great deal to do with the clinical results shown by use of quinine as a prophylactic *vs.* influenza.

If the above suggestions may have any good effect during the next epidemic of influenza, I shall feel that my time and efforts have been well spent.

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THE ULTIMATE PROGNOSIS IN ECLAMPSIA.

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When the immediate death rate from eclampsia ranged from 25 to 40 per cent the ultimate prognosis was relatively unimportant. Now when many clinics have a maternal mortality of 5 per cent or less, more and more attention is being paid to the prognosis for the patient who recovers. Attention is directed particularly to the behavior of these patients at subsequent pregnancies and to their likelihood of developing cardio-renal-vascular disease. These reports naturally vary somewhat. In the first place, the criteria for the diagnosis of "toxemia" differ. Some

consider a systolic blood pressure of 130 mm. of mercury evidence of toxemia, whereas others place this figure at 140 or 150 mm. of mercury. In the second place, the length of time the patients are followed varies. Usually it is stated that from two to twenty years have elapsed since the initial toxemia, but the cases have not been broken down into five year or ten year groups, as is the universal custom in studies on the prognosis of cancer. Nevertheless, there has been a certain agreement in these reports. For instance, Browne and Dodds, of the University

of London, using 130 mm. of mercury as a basis for the diagnosis of "hypertension," found that 6.5 per cent of their eclamptics died immediately, 26 per cent remained well, and 60.8 per cent had hypertension. Lewis, in a study at the Nashville General Hospital, found that, of the eclamptics who survived, 10 per cent had a recurrence of eclampsia and nearly 40 per cent subsequent pre-eclampsia. Forty per cent had normal subsequent pregnancies and 10 per cent a chronic vascular renal disease as evidenced by a systolic blood pressure of 140 mm. of mercury. T. J. Williams, in an address at the recent spring post-graduate clinics of the Medical College of Virginia, said that approximately 50 per cent of the toxemia patients, convulsive and non-convulsive, at the University of Virginia, had subsequent hypertensive or toxic pregnancies. According to these three recent studies the ultimate prognosis depends upon a number of factors. In general, the older the patient, the greater her parity, the greater the number of fits, the higher the blood pressure during pregnancy and the higher her blood pressure upon discharge, the more likely she is to have permanent vascular damage.

In our follow-up studies we have confined ourselves to the convulsive group because it is a more homogeneous and more sharply defined group than the combined convulsive and non-convulsive toxemias. In doing so, we do not mean to suggest that pre-eclampsia is not important or does not merit consideration. Peckham has shown that pre-eclampsia is more likely to be followed by permanent damage than is eclampsia. He attributes this to the fact that eclampsia is of a shorter duration. In pre-eclampsia there is a greater tendency to temporize and the patient is exposed to the effects of the disease for a longer time than is the case when she has convulsions. The criterion for hypertension for one of us in 1931 was a systolic pressure of 150 mm. of mercury and we have kept the same standard in the present study.

In 1931, one of us (M. P. R.) attempted to locate his surviving eclamptics. This was fairly easy for the private patients as he was still in touch with most of them. Information concerning the ones he had seen in consultation was kindly furnished by their family doctors. The clinic patients presented a greater problem. Negro patients are notoriously careless about names, and often their names are spelled entirely differently on subsequent admissions. An other group, fortunately a small one, that gave

trouble in the follow-up study was the unmarried white mothers. Usually all trace of these was lost when they were discharged. The records of the outpatient department and of the Memorial and St. Philip Hospitals, as well as the vital statistics in the City Hall were searched. In this way some record of eighty out of 171 patients was found. From the nature of the follow-up, this was probably the worst half. Recurrent eclampsia occurred in 7.6 per cent. This year an attempt was made to bring the study up to date. The cases since 1931 were private patients, so our efforts were limited to writing to their doctors. Here, too, the unmarried mothers could not be traced. Another difficulty encountered was a shift in the population that occurred during the depression. A number of doctors wrote that the patient had moved and that he had lost all trace of her. Miss Estelle Marks, of the State Bureau of Vital Statistics, very kindly searched the files of the marriages and deaths and located several in this manner. It is, of course, possible that some may have died in another state.

What information we have been able to gather was charted so that each line of the chart represents a patient with her eclampsia, abortions, miscarriages, labors (toxic and otherwise), blood pressure determinations, whether normal or hypertension, and death indicated in the appropriate age columns. The cases were then broken down into a five year study, a ten year study and a more than ten year study.

There were 109 patients of whom we had some knowledge for five years after the eclamptic seizure. These patients had ninety-four subsequent term pregnancies in the five following years, of which nineteen were toxic. Seven of the nineteen toxic pregnancies were eclamptic. There were in addition four miscarriages and sixteen abortions, four of which were induced. Twenty of the patients who did not become pregnant in this period had a normal blood pressure. Fifty-eight showed no evidence of toxemia in their subsequent pregnancies, so that seventy-eight of the 109 patients, or 71 per cent, showed no evidence of permanent vascular damage. One had advanced tuberculosis and one hypertrophic vulvitis. Four patients had a systolic blood pressure of over 150 on one or more occasions, and six died. Two of these deaths were due to tuberculosis and four to hypertension.

The ten year study shows the fifty-three patients who were followed from six to ten years. In this

group there were seventy-five subsequent term pregnancies, of which fourteen were toxic. Five of the fourteen had eclampsia. There were seven miscarriages, three of which were considered toxic and fifteen abortions, two of which were induced. Eleven of the patients who had no subsequent pregnancies were known to have normal blood pressures. Twenty-three patients showed no evidence of toxemia in their subsequent pregnancies, a total of thirty-four patients with no permanent vascular damage, or 64 per cent. Four had hypertension on one or more occasions in this period and two of this hypertensive group died.

Twenty-nine patients were followed for more than ten years. These patients had fifty-five subsequent term pregnancies, of which thirteen were toxic, including four attacks of eclampsia. There were in addition eight miscarriages, seven of which were toxic, and twenty-three abortions, five of which were induced. Four patients did not become pregnant again and remained normal, and eleven remained normal through their subsequent pregnancies, a percentage of 51.7 who were free from hypertension. Six patients were known to have hypertension and another had apoplexy at her last pregnancy in her forty-seventh year. The report that we got of her said nothing about her blood pressure. Five patients died, three of whom had hypertension.

To summarize, 71 per cent of the five year group, 64 per cent of the ten year group, and 51.7 per cent of the more than ten year group remained free from evidence of vascular-renal disease. In round numbers, 5 per cent (of the last 142 patients) died immediately, 5 per cent in the first five years, 4 per cent in the next five years, and 17 per cent after that period.

The question arises whether this is a greater number of deaths than would be expected in a similar

group of the same ages who had not had eclampsia. The expected mortality was calculated for the years of life exposed in the charts. For a basis, it was decided to use the Life Table for White Females for the years 1929-1931. This table, which is based on the 1930 census, was published in Dublin and Lotka's book, "The Length of Life."

The results are shown in the following table:

(1) Years Exposed	(2) Actual Deaths	(3) Expected Deaths	Ratio % (2) ÷ (3)	Probable Error
3198	13	14.7	90%	± 18

The causes of the thirteen actual deaths were as follows:

Toxemia	4	Tuberculosis	2
Hypertension	3	Unknown	4

It is surprising to find that there were fewer actual deaths than would be expected according to this life table. While it must be admitted that the follow-up method used may have missed some deaths, this does suggest that the mortality of women with a history of eclampsia is not unduly excessive.

CONCLUSIONS

A study of the subsequent course of patients who have had eclampsia shows that a certain percentage, 7½ per cent of our cases, will have a return of the convulsions at a subsequent pregnancy.

A larger percentage, the exact figure depending on the length of time that the patient is observed, will have hypertension whether or not there are subsequent pregnancies. Twenty-nine per cent of the five year group, 36 per cent of the ten year group and 49 per cent of the more than ten year group had hypertension.

The known mortality, however, "was not greater than the expected mortality for white women of the same ages.

THE DIAGNOSIS AND TREATMENT OF STOMACH TROUBLE.*

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Stomach trouble, backache and headache are human miseries that may be trivial or may be symp-

toms of grave conditions. It is important not to neglect even the apparently trivial cases of indigestion on the one hand, nor to make a "mountain out of a mole hill" on the other. Here comes in the significance of good judgment on the part of the

From the Surgical Department of St. Elizabeth's Hospital, Richmond, Va.
*Read before the East Tennessee Medical Association, at LaFollette, Tenn., September 12, 1940.

practitioner who first sees these cases. Much of the teaching of Alvarez concerns the type of patients who continually revel in their gastric discomforts. After a thorough examination has been made and the real cause of the complaints has been determined, the treatment often requires no medication, but a regulation of the patient's life by the psychological recommendations of the practitioner.

As is well known, the stomach is frequently the "goat" of other affections and in indigestion the stomach itself is often not primarily at fault, but merely affords expression for other diseases. Thus, stomach trouble of some kind may arise from a tumor of the brain, or from an infection of the foot. Almost all acute infectious diseases give as an early symptom anorexia, nausea and vomiting. Any kind of toxic disease or poisoning may produce anorexia or nausea. Psychic or emotional disturbances and improper diet are among the common causes of stomach trouble. On the other hand, organic affections of the stomach, such as ulcer or cancer, may give rise to symptoms of indigestion, and cancer in certain portions of the stomach may be far advanced before it shows any gastric symptoms whatever.

In such a condition of affairs, the treatment naturally is varied and this field is rich for the cultists and for empirical remedies. Occasionally remedies will seem to be effective when there is no definite therapeutic explanation. Everyone has heard of the old woman remedy of damson preserves for hiccoughs. We frequently use it for hiccoughs, not neglecting, however, other more logical remedies. Occasionally it seems to be successful. Whether it is because the disease is about to get well of itself, or whether there is a psychological or therapeutic value to it, I do not know, but at any rate it does no harm and when the patient or his relatives have their minds firmly fixed on damson preserves as a remedy for hiccoughs, far be it from me to withhold such treatment.

Numerous diets are used which have no logical basis. They range from raw eggs to sauerkraut. Fletcherism, which consists in masticating foods for a long time in a definite manner, was for a while quite popular, but seems to have lost its vogue.

ANATOMY AND PHYSIOLOGY

In order to understand the rationale of stomach disorders, it might be well briefly to review the anatomy and physiology of the stomach and small

intestines. The stomach is divided by Cannon for physiologic observations into the body and the pyloric end of the stomach. These are separated by a notch at the lesser curvature, the incisura angularis or re-entrant angle, and a line drawn from this point to a point opposite it on the greater curvature divides the two portions of the stomach. The part above a horizontal line drawn through the cardiac end of the esophagus is the fundus, and in the usual X-ray examination it is filled with gas. On the right of the line from the incisura angularis to the greater curvature is the pyloric portion of the stomach, which is divided by some observers into three parts and by others into two. The vestibule and the antrum have essentially the same function and such a subdivision seems to be unnecessary, so it might be said that the pyloric portion of the stomach consists of the antrum and the pyloric canal. There are three muscular layers. The pyloric canal is about $1\frac{1}{4}$ inches in length and contains thick circular muscular fibers terminating in the pyloric sphincter. It is in the pyloric canal that congenital pyloric stenosis occurs.

The external nerve supply is from the sympathetic and the parasympathetic nerves. Within the stomach are the myenteric or Auerbach's plexus between the longitudinal and circular muscular coats, and Meissner's plexus in the submucosa. The extrinsic nerves of the stomach are from the vagus and the sympathetic. The vagus carries most of the stimulating fibers, but a few of the inhibitor. The chief inhibitor fibers go through the sympathetic, though the sympathetic also carries a few of the stimulating fibers. The stomach of an experimental animal can be separated from its external nerve supply and after a few weeks of turmoil will readjust itself fairly well to functioning under its local nerve supply.

The pyloric portion of the stomach secretes an alkaline fluid, but no hydrochloric acid or pepsin. The hydrochloric acid and pepsin are secreted by the main body of the stomach, from the re-entrant angle up to and including the cardiac portion.

The great majority of gastric symptoms comes from derangement of the motor system. Peristalsis as observed roentgenologically begins about the middle of the body of the stomach and proceeds with increasing vigor toward the pylorus, while the fundus of the cardiac portion is in tonic contraction as a rubber bag.

Alvarez and others have shown that the real initiation of gastric peristalsis begins along the lesser curvature where the tissue acts as neuromuscular tissue as in the sinus of the heart. This movement is too delicate at first to be detected by the x-rays. There is also what Alvarez calls a gradient, that is, the muscle along the lesser curvature of the cardiac end of the stomach intrinsically contracts more rapidly than that at the pyloric end. In the cardiac portion of the lesser curvature it contracts at the rate of eleven contractions per minute; muscle from the pyloric end of the stomach makes only two contraction per minute. With such delicate mechanism it can be readily seen that the motor arrangement of the stomach may easily be upset. The musculature that contracts more readily and rapidly is more sensitive to toxic influences, so that in acute infectious diseases, for instance, the musculature along the cardiac portion of the lesser curvature of the stomach is more profoundly affected than at the pyloric end, and the rate and force of contraction may be reversed. This will cause nausea and occasionally even vomiting.

Then, too, the reflexes from a distance are pronounced. Walter Hughson has shown that a marked reflex pylorospasm may be induced by injury to the peritoneum, but that section of the vagus nerve just below the diaphragm or along the lesser curvature will relieve this pylorospasm, for it breaks the arc of the reflex. This accounts for the frequent nausea and vomiting in abdominal affections in which the peritoneum is involved, as in appendicitis.

The actual secretion of the stomach, strange to say, has but little to do with most symptoms. Achlorhydria if it exists for a long time may cause fermentation in the stomach and duodenum with increased bacteria because the hydrochloric acid is bactericidal, but even then with a careful diet the symptoms are comparatively slight. Routine examination of the stomach contents, even in younger people, has shown that there is a larger percentage of individuals with low acid or even achlorhydria than has been usually supposed. When the achlorhydria is intrinsic in the stomach the treatment by giving hydrochloric acid is obvious. When, however, it is due to other things, as toxemia from cancer or a diseased gall-bladder, this treatment will not be so effective as removal of the cause would be.

VITAMINS

In recent years the vitamins have come into great prominence, and the deficiency of some of the vitamins in the diet may in itself cause indigestion. The importance of vitamin A, the B complex including B₁ commonly known as thiamin and B₂ (flavin), and nicotinic acid which tends to prevent pellagra, is recognized. Vitamin C, ascorbic acid, sometimes known as cevitamic acid, prevents scurvy with its derangements of the digestion and of the mouth. Vitamin D prevents rickets, and vitamin E, chemically related to the sterols, is associated with the maintenance of the reproduction processes. Vitamin K is essential for the proper coagulation of the blood. Vitamin P, prepared from orange peel, seems to have a beneficial effect in the management of certain forms of vascular purpura in children, though it apparently has no direct effect upon the symptoms of stomach trouble. The consideration of the diet in preventing stomach trouble or in its treatment is, of course, essential but cannot be more than mentioned here, though the necessity of providing other things than carbohydrates, fats, proteins, water and salts is increasingly obvious.

VARIOUS CAUSES

Derangement of the stomach dependent upon reflexes has been mentioned, and pylorospasm may occur from a diseased appendix or from direct stimulation through the vagus. Eye strain, headache, cerebral or spinal lesions may precipitate stomach trouble. Indigestion due to toxic conditions should be recognized and treated at the source. Not infrequently a nephritis will manifest itself first as a stomach symptom. The toxemia of pregnancy, the diseases of the liver which prevent elimination or the normal changes in amino acids and other material absorbed from the intestines may give early signs of stomach trouble. Naturally improper foods or excessive indulgence in alcohol may irritate the gastric mucosa and upset gastric peristalsis.

HUNGER PAINS OR FOOD RELIEF

Of the different forms of indigestion, probably the most characteristic is the so-called "hunger pain". This comes on usually with clock-like regularity two or three hours after a meal when the stomach is about empty. Its etiology has never been satisfactorily ascertained, though Cannon has demonstrated that the direct cause of hunger pain is ex-

cessive gastric contraction. It is known, however, that it usually occurs when the value of the hydrochloric acid in the stomach is high, after the food has been emptied, and the normal secretion of hydrochloric acid remains. It may be due to the action of the acid upon the tissues of the peptic ulcer which have been already sensitized by the inflammation, though a wound in the stomach which exposes a raw surface does not usually produce these hunger pains. At any rate, efforts which tend to lower the acidity of the gastric juice, such as giving food, alkalies or a Sippy diet, usually relieve this discomfort.

Hunger pains, however, are not always due to peptic ulcer. Thus, Dr. W. H. Higgins reviewed 162 consecutive abdominal operations at St. Elizabeth's Hospital, Richmond, Virginia, in which there seemed to be some symptoms of disturbed digestion. Of these, there were 33 cases of chronic cholecystitis of which 5, or 15.4 per cent, gave a definite history of food relief. Of 47 cases of chronic appendicitis, 7, or 17.5 per cent, showed food relief. In 34 cases of combined chronic cholecystitis and chronic appendicitis, 3, or 8.6 per cent, gave a history of food relief. In 46 cases of peptic ulcer, 21, or 45.7 per cent, gave a history of food relief. "The interesting feature of this summary is the relative frequency of hunger pains in gall-bladder, appendiceal and duodenal infections. Relief of pain by ingestion of food has been generally recognized as a cardinal symptom of duodenal ulcer, and has served as one of the most important differential points in the diagnosis of this condition. It is rather remarkable that slightly less than one-half of the ulcer cases in our series gave this history. We may assume from this low percentage that a duodenal lesion alone is not the sole provocative factor, and it becomes more apparent when we find the same symptoms in from 8 to 17 per cent of our chronic gall-bladder and appendiceal cases."

DIAGNOSIS AND TREATMENT

The diagnosis and treatment of stomach trouble, then, demand a broad medical vision and include not only the observations that an intelligent physician would make, but an appreciation of the few instances in which the patient should be referred to a specialist. The great majority of cases of stomach trouble can be diagnosed and treated successfully by the general practitioner. The important

thing in these cases is to recognize and treat the patient as well as the disease. Cannon and other physiologists have pointed out experimentally what has been obvious to the careful clinical observer, that the relation of the nerves and the endocrines to the process of digestion is very marked. A patient who is under a nervous strain, who has some secret sorrow, who is discontented and worried, frequently, has indigestion. The environment and the mental condition of the patient must always be considered. The profound effect of the cerebrum in initiating impulses is well known. William Beaumont, the father of physiology of the stomach, discovered and described accurately very many fundamentals which are now recognized. Among them is the fact that food placed in the stomach almost immediately excited the secretion of gastric juice, but one important thing that he might have found, but did not, was the later discovery by Pavlov and others of the so-called appetite gastric juice; that is, that food placed in the mouth before it reaches the stomach, or even the suggestion of food or the odor of food, will bring gastric juice when there is no physical contact with the mucosa of the stomach. The stimulation of the secretion of gastric juice by food is usually accompanied by the stimulation of gastric peristalsis.

The treatment of the patient and the regulation of the diet go hand-in-hand. Not infrequently the regulation of the diet is too rigid. Food unpalatable and distasteful is often wrong. There are, of course, restrictions that are necessary in the quantity or quality of intake, and in these days with accurately trained dietitians the effective diet for certain diseases has been well worked out. It is obvious that with certain abnormal appetites it may occasionally be necessary to give a restricted and unacceptable diet.

The excessive use of alcohol is, of course, deleterious, but, particularly in people of middle age or past middle age, alcohol given in proper amounts and in palatable drinks may be distinctly beneficial. In the elderly, for instance, the administration of some form of liquor as an eggnog, or something that carries nutrition, may be advantageous.

Another prominent cause of stomach trouble is allergy. Despite the jibes that have been cast at allergy, a real basis for its manifestations undoubtedly exists. Many cases of stomach trouble are

precipitated or actually caused by some allergic condition. The fact that milk or eggs are allergic to some individuals has been proved. Other articles of diet may disagree with an individual without any obvious physiologic or biochemical reason. The old phrase that "what is one man's meat may be another man's poison" is one of the allergic principles.

LESIONS OF THE STOMACH

When, however, we come to an important minority of cases in which stomach trouble is caused by a lesion of the stomach or duodenum, the picture changes. The two outstanding intrinsic lesions that cause stomach trouble are peptic ulcer and cancer. Again referring back to the physiology of the stomach, its location has much to do with the symptoms. Only about half of the peptic ulcers give distinct symptoms of hunger pain or food relief. Peptic ulcer in the stomach undoubtedly may cause cancer. Just how many cases of cancer of the stomach are caused by peptic ulcer it is difficult to say, but everyone acknowledges that there is a certain percentage of gastric peptic ulcers that turn into cancer. I have seen several cases, and I believe a correct estimate would be probably about 15 per cent of cases of gastric cancer that are preceded by peptic ulcer. Competent roentgenologists say that practically every lesion along the greater curvature of the stomach that can be demonstrated roentgenologically is malignant, while the majority of lesions on the lesser curvature and along the posterior wall of the stomach are benign.

Peptic ulcer of the duodenum is far more frequent than peptic ulcer of the stomach, and peptic ulcer in either the stomach or the duodenum is more common in men than in women. Peptic ulcer in the duodenum is usually found in the younger males though no age is actually exempt. Strain, stress and worry have much to do with its etiology. Cushing has shown that after operations upon the brain in which the basal structures are involved peptic ulcer frequently occurs. Stimulation of the vagus nerves tends to produce hyperemia of the stomach, heightened tone of its muscles and increased secretion of hydrochloric acid. Yet there are some instances of peptic ulcer that cannot be ascribed to nervous influences. Rosenow contends that the streptococcus viridans is at fault in many of these cases, and peptic ulcer has been reported in infants in whom worry about the stock market or disappointments in

love cannot be a factor. In such instances, milk contaminated by infected udders of cows may be the cause.

Peptic ulcer of the duodenum should always be treated medically unless there is some complication, such as hemorrhage, perforation or obstruction. Hemorrhage in a peptic ulcer in a patient past 45 years of age usually calls for operation, because it is more than likely to be repeated and with the thickening of the arteries it is more difficult to control. Small hemorrhages, though, in the younger may be safely entrusted to proper medical care.

Peptic ulcer of the stomach, however, is a different problem, because peptic ulcer of the duodenum very rarely becomes malignant, though there are some cases on record. There is no cure for cancer of the stomach except a surgical operation. A prepyloric ulcer in the stomach is more likely to be malignant than one farther up on the lesser curvature. When peptic ulcer of the stomach does not yield to careful medical treatment after a few weeks, in my judgment operation should be advised, preferably excision of the ulcer by a partial gastrectomy which will permit the emptying of the stomach contents into the duodenum instead of into the jejunum.

TREATMENT OF PEPTIC ULCER

As for medical treatment, the diet for a peptic ulcer is quite well known. The use of bicarbonate of soda, except in very occasional instances, should be avoided. The frequent taking of bicarbonate of soda often causes an alkalosis, it actually increases the secretion of the stomach and eventually may produce a gastritis. The better treatment is by the use of foods, with the Sippy diet as the basis, and modified to suit the case. It is important to see that the food is soft and smooth. It has been shown experimentally that rough food in artificially created ulcers in a dog prolongs the healing, so such things as lettuce, celery, corn and cabbage should be avoided. In the administration of alkalies, however, the best medicine for continuous use is usually some form of carbonate of magnesia, and particularly tablets composed of calcium carbonate, magnesium carbonate and bismuth subcarbonate. These may be taken almost indefinitely without injury to the gastric mucosa and with but little danger of alkalosis. Preparations or derivatives of belladonna are often helpful.

When a peptic ulcer develops within the grasp of the pyloric sphincter, or has penetrated into the

pancreas, it is usually but little affected by medical treatment and demands a partial gastrectomy.

The physician who treats a peptic ulcer of the stomach indefinitely by medical means assumes a very grave responsibility. Even though relief may be satisfactory within a few weeks, there may be a recurrence. Here the examination by a competent roentgenologist is highly important. Probably one of the most dangerous influences in cancer of the stomach is friendship, and this may include not only the lay friends of the patient but the doctor friends who do not wish to face disagreeable facts. *Practically all early cases of cancer of the stomach are relieved by medical treatment at first; so relief of symptoms by medical treatment is not a therapeutic test in early cancer.*

Cancer of the stomach gives no typical symptoms. There may be hunger pains or only a "slight indigestion". Hydrochloric acid in the gastric juice is usually low or absent, but may be normal or even high. The important point in every case of stomach trouble is to be suspicious. In any complaint of indigestion that cannot be satisfactorily explained or accounted for there should be a gastric analysis followed by a competent roentgenologic examination both by plates and the flouroscope. If the lesion of

the stomach is reasonably doubtful as to malignancy, it is safer to operate than to wait. If the roentgenologic examination shows cancer, certainly there can be no point in waiting. Whether an early lesion may be a beginning malignant ulcer, or whether it may be a peptic ulcer turning into cancer, makes no difference clinically. The lesions are equally dangerous. And the only treatment for gastric cancer is operation.

CONCLUSION

The fact that there were 27,102 deaths from cancer of the stomach in the Registration Area of the United States in 1938, is a thing that should excite our profound interest and makes it incumbent upon practitioners that the cause of stomach trouble shall be well established before dismissing the case as one in which there is no organic lesion. Those who have had much experience in gastric surgery have seen cases that have been treated for nervous indigestion for years before cancer was suspected, and when the malignancy was found it was frequently too late. It is only by intelligently "watching our ramparts" of stomach trouble that we shall be able to detect the small percentage of serious organic lesions of the stomach that demand surgical treatment.

A RAPID BEDSIDE MICRO-PROTHROMBIN TEST— A Preliminary Report.

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Increasing interest is being shown in the relation of the prothrombin in the blood to hemorrhagic disease of the newborn and various conditions which decrease bile salt production or prevent the flow of bile to the intestines. It is now known that the hemor-

rhagic diathesis in these conditions is due to an ab-deficiency is extreme. Numerous methods have been developed for determining the prothrombin level. In normal lowering of the blood prothrombin. The ordinary tests for bleeding and clotting time seem to reveal this abnormality only when the prothrombin bedside procedure for the determination of prothrombin, designed to make it more acceptable for use in this paper we wish to describe briefly a simple, rapid the average hospital.

*M/40 calcium chloride is prepared by dissolving 1.11 grams anhydrous calcium chloride, C.P., in 400 c.c. of distilled water.

**Thromboplastin suspension is prepared from the brain of a freshly killed rabbit as described by Quick.⁵ This is kept in the ice box when not in use.

METHOD

Ten c.mm. of M/40 calcium chloride* and 10 c.mm. of freshly prepared thromboplastin** are measured out separately with microhemopipettes¹ and placed side by side, without mixing, in the well of a clean hanging drop slide. If only one microhemopipette is available, it should be rinsed with normal saline after each use. The site selected for bleeding is cleansed with alcohol and wiped dry. After making a satisfactory puncture with a lancet and discarding the first drop of blood, blood is then drawn to the 10 c.mm. mark in the pipette. This is rapidly added to the other reagents and the three are mixed thoroughly for several seconds with a fine glass rod. The slide is then tilted slowly from side to side until the mixture begins to gel. Then by gently passing

finger tips in older children and adults are suitable sites for bleeding.

FINDINGS AND DISCUSSION

This technique is based on Quick and associates² original test, depending upon recalcification and the addition of an excess of thromboplastin. Quick³ also described a rough test in which the coagulation time is determined by mixing one drop of whole blood with one drop of thromboplastin. Kato's modification⁴ of Quick's original test makes use of whole oxalated capillary blood instead of oxalated plasma. Both Kato's and our test eliminate centrifugation, venipuncture and the difficulties associated with venipuncture in infants. In our experience with Kato's method, however, the end point was not always defi-

CHART I.

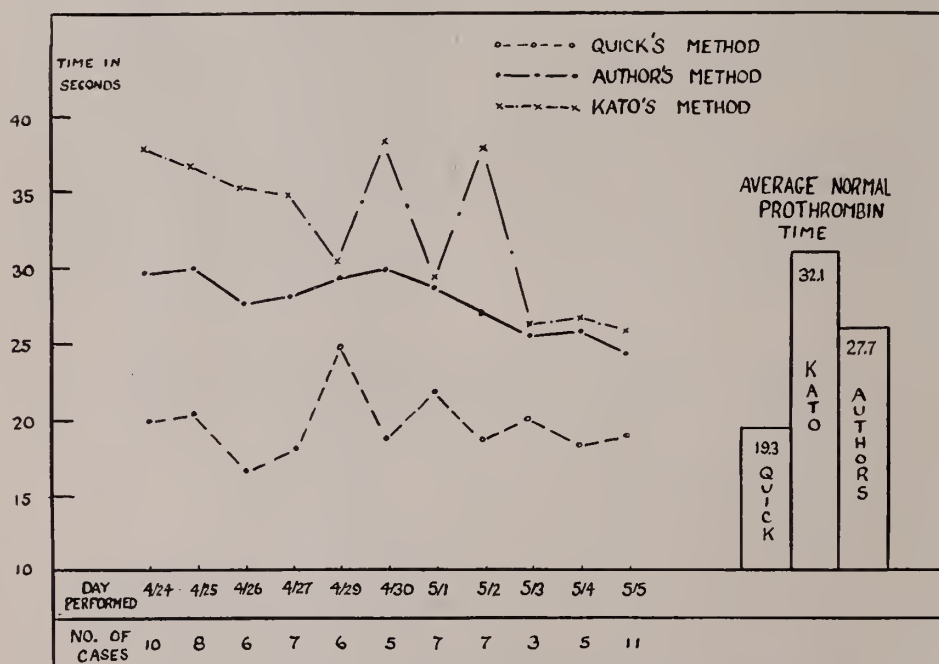


Chart I.—Prothrombin determinations of seventy-five normal individuals by Quick, Kato and author's methods.

the glass rod through the gelatinous mass, the end point is corroborated. The time of clotting is determined accurately with a stop watch, which is started when the reagents are mixed and stopped at the first sign of clot formation. The end point is definite.

Thromboplastin, stored in the ice box, is brought to room temperature just prior to use.

The heel, preferably the edge of the plantar surface in premature and full term infants, and the

nite and at times there were variations in results when the test was performed immediately and then again after standing for one-half hour. In order to eliminate the above difficulties, we have developed the bedside procedure previously described. Since our test, requiring only one drop of blood, is performed immediately, there is no deterioration of prothrombin and no need for oxalating the blood.

Our test, compared with Quick's and Kato's methods, on seventy-five normal cases, shows a satisfac-

tory correlation of results. This can be seen by referring to Chart I. The average normal prothrombin time was 27.7 seconds. A comparison of the aforementioned methods was made on newborn babies, one to four days old, and on cases with obstructive jaundice. The results obtained indicate that our test can be used in cases where prolonged prothrombin times occur.

SUMMARY

1. A rapid bedside method for the determination of prothrombin, requiring only one drop of blood, is presented.

2. Since the test is performed immediately after drawing the blood, there is no deterioration of prothrombin.

3. The average prothrombin time on seventy-five normal cases was 27.7 seconds.

4. It is a procedure adaptable for use in the aver-

age hospital and particularly suited for use on newborn babies.

5. The test compared favorably with the methods of both Quick and Kato.

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ROENTGEN THERAPY OF INFLAMMATORY CONDITIONS.

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The therapy of inflammatory conditions is a wide field, in which the roentgenologist may obtain results which are most gratifying to both the patient and the physician. This is especially true in the acute infections, where roentgen therapy often causes a dramatic relief of pain and a rapid change from a virulent, spreading inflammation to a minor, localized suppuration. Unfortunately, however, the roentgenologist sees a relatively small percentage of the acute inflammations, and very few of them in the early stages, when roentgen therapy is most effective. This is, in part, due to the general belief that most acute inflammations are of minor importance, and self-limited or easily handled by poulticing or by simple incision. Often it is only when these minor infections fail to respond to home treatment that a physician is consulted, and usually these cases are referred to the roentgenologist only when ordinary methods of treatment have failed, or when, by reason of the location of the process or a virulent course, the prognosis is poor with surgical or medical treatment. This situation is gradually changing as physicians, including roentgenologists, are convinced by their own experiences of the great value of the roentgen ray in the therapy of infections and inflammations.

In the chronic inflammatory lesions the results of roentgen therapy are not so spectacular as in the acute processes; many of these cases have been treated with a variety of local applications, internal medications, vaccines, antigens and serums, before coming to the roentgenologist; quite frequently, the use of one or more of these agents in conjunction with properly administered roentgen therapy will result in the rapid relief of a chronic, disabling process; in a few chronic infections the roentgen rays have almost a specific action.

The first report of the successful treatment of acute inflammations with the roentgen ray appears to have been by Coyle¹³ in 1906, although before this Musser and Edsall⁶⁵ in 1905 had suggested the use of X-rays in unresolved pneumonias, and in 1906 Edsall and Pemberton²⁶ reported the rapid resolution of unresolved pneumonia following roentgen therapy. These reports attracted little attention, apparently, but in 1916 Dunham²⁴ reported sixty-seven cases of carbuncle treated by roentgen rays. This was followed by the reports of Ross⁷⁵ in 1917, Richards⁷⁴ in 1922, Lewis⁵⁸ in 1923, and Hodges⁴¹ in 1924. Dunham,²⁵ in an editorial in 1927, stated that "The X-ray is almost universally beneficial in the treatment of infection" and that many roentgenologists were over-

looking the treatment of minor but sometimes virulent infections.

The action of roentgen rays in inflammations is generally considered to be due to the destructive effect of the rays on the leucocytes. Warthin⁸⁴ found evidence of the beginning disintegration of lymphocytes fifteen minutes after X-ray treatment. Thorsness⁸³ demonstrated the effect of the antibodies released by the disintegration of leucocytes; he produced two or more experimental abscesses in the same animal, treated one abscess with X-rays, and found that the untreated abscess showed changes similar to those of the treated abscess, which he interpreted as due to circulating hormones liberated at the irradiated area. Soto, Brunschwig and Schlutz⁸² have recently published a study of the effects of radiation in acute pyogenic infections.

The treatment of acne in its various forms is given considerable space in all the books on skin diseases, as well as in some of those dealing with roentgen therapy. The treatment of acne cannot be according to any fixed routine, but must be planned individually for each case: the girl with acne rosacea will require a different regime from that of the man with a long-standing, chronic, acne vulgaris. Both will require small doses of roentgen rays at intervals of four to seven days, but the acne rosacea may be treated with low voltage unfiltered rays, while the acne vulgaris will require higher voltage and filtration graded in accordance with the depth of the involvement and the amount of scarring present. In all cases, regardless of the filtration and dosage of the rays, care must be observed; small doses of roentgen rays may be repeated many times without producing any visible skin reaction, but, if the skin tolerance is exceeded, late changes, such as skin atrophy and telangiectasia, will occur, and the final result may be worse than the disease treated. Sherman⁷⁸ has reported on his twenty-seven years of experience in treating acne with roentgen rays, and is of the opinion that good results are obtained when roentgen therapy is combined with the proper associated treatment.

Actinomycosis may cause an acute, and fatal, infection, but generally runs a sub-acute or chronic course. Roentgen therapy, combined with surgery and the administration of iodides, is the best treatment now available. Desjardins¹⁶ is of the opinion that the chief factor in the cure of proven cases has been irradiation. Treatment may be given with low or intermediate voltages in the superficial lesions,

but in many cases high voltage with moderate or heavy filtration may be required to deliver an adequate dose to the involved tissues. Treatment may be given daily, or at intervals of several days; the total dose will vary with the quality of the ray, but should be within the skin tolerance. Archer² has reported good results in cervico-facial lesions, with surgery, iodides, and irradiation. Smith,⁷⁹ in 1934, reviewed the literature and compiled the results of roentgen therapy in actinomycosis. Of 129 cervico-facial cases, 107 were healed, twelve improved, and ten died; of forty-five abdominal cases, seventeen were healed, six improved, and twenty-two died; of twenty-one thoracic cases, two were healed, two improved, and seventeen died.

Adenitis involving the cervical, axillary, or inguinal glands, and some forms of mediastinal adenopathy, will usually respond to moderate doses of X-rays. Here the voltage and filtration must be varied with the depth and size of the involved glands; generally, with 140 KV and 0.25 mm. copper and 1.0 mm. aluminum filters, or 200 KV and 0.5 mm. copper and 1.0 mm. aluminum filters, 150 to 300 r may be given and repeated two or three times at intervals of seven to ten days. In some cases a single treatment will cause rapid regression of the enlargement, and generally only two or three treatments are needed. Pfahler and Kapo⁶⁹ reported 333 cases of cervical adenitis treated with roentgen rays; of these, 133 were diagnosed as tubercular. They are of the opinion that chronic enlargements of the cervical glands are perhaps the result of repeated focal infections with possible secondary invasion by the tubercle bacillus. Their cases treated during the last five years of the period covered were all greatly improved or cured.

Arthritis and para-arthritis, both the acute and chronic types, may be greatly benefited by irradiation combined with other forms of treatment; co-operation of and with the internist is a requisite for good results, especially in the chronic cases. Langer⁵⁴ has had good results in arthritis by giving roentgen ray treatments over the vegetative nerve centers and over the involved joints, the roentgen therapy being combined with other measures; 75 per cent of his cases showed marked improvement, and 25 per cent slight temporary improvement. There was increased pain after irradiation, lasting about forty-eight hours, and in some cases up to two weeks. He notes that X-ray treatment over the involved joint is the best

treatment for gonococcus infection. Guillaumet³⁶ has reported rapid relief of pain, and prompt improvement in gonococcic arthritis treated with moderate doses of roentgen rays. DeLorimer¹⁵ found that acute para-arthritis cases were completely relieved by irradiation of the involved area, and that calcareous deposits were absorbed.

Various acute and chronic inflammations of the lungs and bronchi have been treated by irradiation, with some degree of success. Musser and Edsall⁶⁵ in 1905 first suggested the use of X-rays in unresolved pneumonia, and in 1906 Edsall and Pemberton²⁶ reported three cases of delayed resolution of pneumonia, in which treatment with X-rays was followed by prompt resolution. This method of treatment did not gain popularity, as there are no other records of its use until 1916 when Quimby and Quimby⁷² reported successful treatment of twelve cases of unresolved pneumonia with the roentgen rays. Krost,⁵² in 1925, and Merritt and McPeak,⁶⁴ in 1930, reported successful roentgen therapy of unresolved pneumonia. The development of serums for the treatment of pneumonias has overshadowed the use of roentgen rays for therapy in this disease; also, the lack of mobile therapy units and the objection to moving pneumonia cases for treatments has prevented any widespread use of the rays, but there is no doubt that repeated irradiations, of 100 r or more daily, are beneficial in pneumonia. Desjardins¹⁹ has surveyed the literature and reported his own observations on the effects of irradiation on pulmonary tissues. Recently, McIntire and Smith⁶³ have used roentgen therapy in lobar pneumonia, with good results. Powell⁷¹ reports on the use of roentgen therapy in 104 cases of lobar pneumonia, with a mortality of 5 per cent, and in certain types of pneumococcus infection his results have been better than with serum therapy. Powell treated the involved lung area with a single dose of 250 to 350 r, with 135 KV and 3 mm. Al. filter, repeated in thirty-six to forty-eight hours over an opposing field if the temperature had not returned to normal; when indicated, smaller doses were given at forty-eight hour intervals.

Whooping cough, with or without complicating bronchopneumonia, will be benefited by roentgen therapy given over the entire lung fields or over the root zones, alternating anterior and posterior fields and repeating the treatments at intervals of one to three days; 100 r or less is given at each treatment, and the total dose to one case is not more than three-

quarters of an erythema dose. Bowditch and Leonard⁶ in 1923 reported on the use of roentgen rays in pertussis, and their report was followed by a series of articles, ^{7, 8, 28, 53, 81,} with statistics of hundreds of cases.

Bronchial asthma is considered an allergic condition rather than an inflammation, but an *inflammatory change in the ganglia* of the vegetative nervous system is considered a possible cause or factor in this disease. Gerber,^{33, 34} Ramirez and Cole,⁷³ McEachern,⁶² and others have been successful in treating bronchial asthma by irradiating the entire lung fields, the root zones, or the dorsal paravertebral areas. I have found irradiation of the vegetative nerve centers effective in some cases. Using 200 KV with 0.5 mm. Cu. filter with 8 x 10 cm. or 10 x 15 cm. fields, and 150 r to not more than two portals at one treatment; other fields are treated at three day intervals until each field has been treated twice; this course may be repeated after an interval of several weeks. Too large a dose or too large an area treated may cause a severe reaction with exacerbation of symptoms.

Carbuncles and furuncles respond better to roentgen therapy than to any other method of treatment, and there is no other form of therapy that is as satisfactory to the patient, as there is no pain in the application and the pain of the inflammation is quickly relieved. Since Coyle¹³ in 1906 published his observations on the effect of the X-rays on carbuncles, Dunham,²⁴ Ross,⁷⁵ Richards,⁷⁴ Hodges,⁴¹ Light and Sosman,⁵⁹ Desjardins,¹⁷ and others have reported roentgen therapy of such lesions with results far superior to any other therapeutic method. Firor,³⁰ in 1935, reviewed the literature and added his own cases of carbuncle, agreeing with Dunham²⁴ that "Nothing in all roentgen therapy gives such satisfactory results". Light and Sosman⁵⁹ considered roentgen rays a most valuable addition to the therapy of carbuncles. They found that large carbuncles did not respond as well as small ones, and that diabetes had no apparent effect on the result of X-ray therapy. The unsatisfactory state of the treatment of carbuncles without roentgen therapy is reflected in the article of Christopher¹¹ in 1928, listing some thirty methods of treating carbuncle. In May, 1934, I⁸⁵ reported on nineteen carbuncles and 151 furuncles treated with X-rays in one hospital in four and a half years; in the following five months I added six carbuncles and eighteen furuncles to the series in

that hospital. I classed any case in which the pain was not completely relieved or markedly alleviated as a failure. In the twenty-five carbuncles there was one failure—a case that was operated on fifteen days after the first and ten days after the second X-ray treatment. In the light of more experience I consider that this case received inadequate roentgen therapy. Of 169 furuncles there were four failures, these cases requiring surgery for the relief of pain. The only surgery required in any of the successful cases was—in less than one-third—a small incision; the majority of the carbuncles and furuncles opened spontaneously and drained without surgery. At the first treatment I have given from one-half to one erythema dose of roentgen rays, the amount varying inversely with the size of the area treated; additional treatments, with smaller doses, have been given as indicated, but in most furuncles and some carbuncles one treatment was sufficient. In some cases warm compresses, wet with boric acid solution, were used; in others, there was no treatment after irradiation except a protective dressing. I have used from 76 KV with no filter to 200 KV with 0.5 mm. Cu. and 1.0 mm. Al. filters, the increased voltage and filtration used for cases with deep infiltration; in the majority of the cases, 100 KV with 1.0 mm. Al. filter was used.

Osgood⁶⁷ noted undesirable reactions in acute inflammations treated with large doses of roentgen rays, and advocates small doses, 50 to 100 r, given daily or on alternate days. I have found such small doses effective in erysipelas and cellulitis, but in carbuncles and furuncles the larger doses are more effective and produce more consistently good results. Firor³⁰ has used 300 to 415 r on early carbuncle cases, followed in a day or two with 100 to 150 r, if indicated, but lately he has used 200 to 250 r as the initial dose with equally good results. No hard and fast rule as to voltage, filtration and dosage should be followed; the quality and the quantity of the rays should be varied to suit the individual case, according to the judgment of the roentgenologist.

Erysipelas, cellulitis, Ludwig's angina, acute mastitis with or without abscess, post-operative and post-traumatic infections,⁴⁵ will be improved and in many cases cured by adequate and timely roentgen therapy. Relatively small doses will be effective in these conditions, and, except for Ludwig's angina, low voltage with little or no filtration provides the proper quality of rays.

In the past, in both the war wounds and those of civil life, gas gangrene, or *B. Welchii* infection, has reaped a heavy toll of lives and limbs; Kelly⁴⁷ in 1933 reported that with roentgen therapy as an adjunct to other treatments, such as serum and drainage, five out of nine cases treated recovered. Faust²⁹ added more cases, and Kelly and his associates^{49, 50} continued their work with a reduction of mortality and a decrease in the amputations in gas gangrene cases. In 1938 they⁵⁰ reported a summary of cases treated with X-rays—123 cases with only ten deaths and thirty-three amputations. In seventy-two cases involving extremities, in which amputation was not done, there were only three deaths, a remarkable figure when compared with the usual mortality in this disease. Kelly emphasizes the need for early and repeated treatments, best given with a mobile bed-side therapy unit. Small doses given daily or twice daily, in his opinion, are more effective than larger doses at longer intervals. Kelly⁵¹ has used X-ray treatments as a prophylaxis against gas gangrene and osteomyelitis in wounds and compound fractures, and for the therapy of acute peritonitis.

Fistulas following operation for pilonidal cysts, after suprapubic drainage, or following the drainage of any infected area, may be healed by roentgen therapy when the persistent fistula is due to granulation tissue and not to a retained portion of a cyst or a foreign body. High voltage with moderate filtration, 200 KV with 0.5 mm. Cu. and 1.0 mm. Al. seems more effective than lower voltages; 200 r three times weekly to a total dose of 1200 to 1600 r may be required.

Herpes simplex is a minor inflammatory process, but often a very troublesome one; irradiation is an effective method of treatment.³⁷ In herpes zoster, roentgen therapy to the involved skin area will give relief in some cases, but treatment directed to the root ganglia of the affected segments may be more effective in shortening the course of the disease. When irradiation is given to the ganglia there may be increased pain after the first one or two treatments.

In acute or chronic otitis media and mastoiditis, roentgen therapy offers a non-operative treatment that will result in the cure of a high percentage of cases. Beattie³ in 1921 reported the cure of fourteen cases of subacute and chronic otitis media in adults; Cherniak and Gorodetsky¹⁰ found that five cases of mastoiditis, operated on after roentgen therapy, showed a definite limitation of the inflammatory proc-

ess. Granger³⁵ treated mastoiditis in infants, when there was no sign of bone destruction present, with fractional doses of roentgen rays. Schillinger⁷⁷ reported that 85 per cent of thirty-eight cases of acute mastoiditis without bone destruction showed improvement in clinical condition and signs following radiographic examinations or a small therapy dose, one-fourth S.E.D., of X-rays. Ross⁷⁶ treated forty-one cases of mastoiditis and concludes that X-ray therapy is applicable in almost all phases of mastoiditis, and that the results are satisfactory to the patient and the roentgenologist. Lucinian⁶⁰ analyzed fifty consecutive cases of otitis media and mastoiditis treated by roentgen rays; there was a consistent relief of pain, a gradual drop in fever, initial increase of discharge followed by a gradual decrease, a rapid decrease of swelling and redness of the tympanic membrane, with healing in two to three weeks; hearing improved within forty-eight hours after treatment, and necessary mastoid surgery was reduced. Crain¹² recommends X-ray treatment of all cases of mastoiditis in infants, not only for the effect on the mastoids, but also for the effect on the lymphoid tissues in the nasopharynx which block the Eustachian tubes. Dowdy, Heatly and Pierce²³ attempt to evaluate roentgen therapy in acute otitis media, and are of the opinion that roentgen therapy shortens the average course of the disease, lessens complications, and aids in the treatment of complications.

Acute parotitis will respond to roentgen therapy as an acute infection in any other part of the body. It must be remembered, however, that with the swelling there is considerable depth to the area of inflammation and infection, and for that reason high voltage rays with moderate filtration will probably be more effective than less penetrating rays. Dorrance²² has reported the successful treatment of chronic parotitis with radium, after having had good results in the treatment of acute post-operative parotitis. Radium offers only one advantage over X-rays for this purpose—its portability. With properly filtered X-rays a better distribution is obtained, and a more adequate dose may be delivered to all parts of the infected area with less effect on the skin than with radium.

Chronic pharyngitis, in children or adults, with lymphoid hyperplasia associated, may be considerably improved or completely relieved by roentgen ray treatment. The rays should be directed to the nasopharynx, and, to avoid any marked effect on the salivary glands, the naso-frontal and submental areas

should be used as portals in addition to the lateral fields. Using 200 KV with 0.5 mm. Cu. and 1.0 mm. Al. filters, 100 to 125 r may be given to each of two portals, repeating at two to three day intervals and alternating portals, up to a total dose of 800 to 1200 r in two weeks.

Tubercular laryngitis is not considered amenable to roentgen therapy, but irradiation may be beneficial or palliative in certain selected cases. Birkett^{4, 5} has reported the use of X-rays in treating a case of lupus vulgaris of the oropharynx.

Infections of the nasal accessory sinuses may be considerably improved by roentgen therapy, and in many cases the symptoms may be completely relieved. These cases may not be classed as cured, but they may be considered as arrested or quiescent with the relief of the symptoms of chronic inflammation. Osmond⁶⁸ advocates roentgen therapy in the treatment of acute infections of the antrum and frontal sinuses; Smith and Nickel⁸⁰ had good results in subacute and chronic sinusitis; Hodges,⁴³ and Hodges and Snead⁴⁴ report very good results in selected cases of sinusitis. Eley²⁷ has obtained improvement in about 75 per cent of his cases of chronic sinusitis, and finds roentgen therapy most effective in the hyperplastic type of chronic sinusitis.

The tineas and all of the fungus infections are particularly amenable to roentgen therapy, and therein lies a danger. As many of these infections are chronic and recurrent, a patient once relieved by X-ray treatments will seek the same treatment for a recurrence or a re-infection. In one year, 1930-1931, I treated 144 cases of "dhobie itch" or fungus infection of the feet on the Navy Hospital ship; of these cases I found that more than one-third either returned for re-infections or recurrences within a year or had had previous X-ray therapy for the same condition. Too many roentgen ray treatments in fractional doses may cause severe and permanent skin damage even though no single set of treatments have produced any visible skin reaction. One case had been treated by me in 1928 for fungus infection of the skin on both ankles; he was treated by several others at intervals in 1929 and 1930. In 1928 he received on each area five treatments of one-quarter erythema dose at intervals of one to two weeks; the record of dosage in 1929 and 1930 could not be obtained, but the patient gave no history of any definite skin reaction. In 1931 he returned to me, requesting X-ray treatments for a recurrence or re-infection; I found that he had an

atrophy of the skin with beginning ulcerations, and, after a year of conservative treatment, the involved areas were excised and skin grafting done.

Dorne^{20, 21} had fairly good results with Grenz ray therapy of superficial fungus infections, but the results with low voltage roentgen rays seems to be better than with the long wave-length rays. The treatment of the epidermophytoses and other fungus infections will vary somewhat with the site and type of the infection; on the scalp, in some cases, a single epilation dose will be given, and after the defluvium the residual infection will be treated with medicinal applications; in other parts, 10 to 25 per cent of a skin erythema dose may be given at intervals of three to seven days. In all cases the history of previous irradiation must be diligently inquired into, and treatments must not be continued long enough to approach the skin tolerance. I have found a preparation of 5 per cent thymol and 2 per cent oil of cinnamon in 95 per cent alcohol, as recommended by Myers and Thieves,⁶⁶ a very useful adjunct in the treatment of fungus infections; phenylmercuric nitrate⁵⁵ is also of value as an adjunct or alternative therapeutic agent.

Andrews¹ states that "The only physical method that is of any great value in the treatment of dermatophytoses and dermatophytids is X-ray therapy in fractional dosage. * * * X-ray treatment is palliative but not curative. It does not kill fungi. On areas invaded by fungi topical destructive means must be used."

Levy and Ross⁵⁷ have reported remarkable improvement in cases of active rheumatic heart disease with roentgen therapy, adding another inflammatory process to the many which have responded to this agent. The list of these inflammations is long, and is being increased as roentgen therapy is more widely used, but there is a danger of being over-enthusiastic as well as of being too conservative. Dunham²⁵ has well said "The medical profession must be made to understand the value, the limitation, and the danger of the ray, and the roentgenologist must understand the many and varied manifestations of infection."

NOTE: Wherever dosage figures have been given in r units, the figures represent r units measured in air at focal skin distance without back-scatter.

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VICARIOUS OR ENDOCRINE BLEEDING: A NEW THEORY CONCERNING SPONTANEOUS HEMORRHAGE.*

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The purpose of this article is to attempt, through some illustrative cases, to connect spontaneous bleeding with the endocrine system by showing that through attacking the existing endocrine status the hemorrhage promptly ceases.

The term vicarious or endocrine bleeding seems rather vague but I am using it in order to define certain well known types of bleeding, which I believe to be due to an imbalance in the endocrine system, the final result of which is hemorrhage from various parts of the body. These hemorrhages include those from the nose and throat, so-called functional uterine bleeding, and others to be mentioned. I would further define this bleeding as compulsion bleeding in that, like menstruation, it is the inevitable result of an association of factors and conditions in the body. If these conditions occur, and I am trying to associate them with the endocrine system, hemorrhage must follow from somewhere. The most obvious of these we consider normal, menstruation, the variations of which are familiar, such as too little, too much, or too frequent bleeding. Under this category I would include also:

1. Nose bleeding.
2. Post-tonsillectomy bleeding, that is hemorrhage which occurs from seven to fourteen days after operation.
3. Melena neonatorum and menstruation in the new born. The former is a very serious condition characterized by bleeding in the gastro-intestinal tract. Areas of necrosis and ulceration are found at autopsy in this condition, but, in my opinion, are associated with the bleeding and do not explain its etiology.
4. Bleeding from the nipples and mucous membrane.
5. Polycythemia vera and the hemorrhages associated with it.
6. Idiopathic renal hemorrhage from the pelvis of the kidney and paroxysmal hemoglobinuria.
7. Hemophilia and probably others.

It is my theory that these might be due to an

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endocrine imbalance which forces the patient to bleed, and the only means by which I can prove this at the present time is by some illustrative cases in which I have succeeded in over-throwing the endocrine status of the time by empirical methods, using endocrines. I realize, of course, that this method is by no means conclusive since the cases are few, and I have no concrete data concerning what was changed except the result obtained.

I am excluding from this discussion the following types of bleeding, although some of them may have endocrine factors:

1. Bleeding of hypertension.
2. Bleeding associated with cardiac decompensation.
3. Renal diseases in which bleeding can occur from the gums, the stomach, or anywhere in the gastro-intestinal tract.
4. Cirrhosis of the liver.
5. Bleeding associated with blood diseases, such as the anemias and leukemias.
6. Infections, such as typhoid.
7. Petechial bleeding.
8. Avitaminosis, such as scurvy.
9. Water deficiency.
10. Purpuric bleeding.

It is possible that endocrine factors may be in operation in some of these conditions but their connection as yet is not manifest.

Among the various types of what I shall now call endocrine bleeding, nose bleeding is the most common. In the literature, it is universally recognized that its etiology is unknown and that the hemorrhage occurs from a ruptured vessel in the septum. Treatment, so far, has been directed at the bleeding point by repeated packing and cauterizations of the area which only have been followed by bleeding within a few days or weeks. I am referring, of course, to spontaneous and not to traumatic bleeding caused by nose picking, etc. It seems strange that the history in individual attacks of nose bleeding is so universally neglected. For instance, I find especially in children that they will tell you they have a headache

first, or a fullness in the head as if it would burst and then comes the bleeding, after which they feel much better. Also, it seems strange that cold applications are used on the nose instead of warm ones. The same surgeon who will apply hot packs to an oozing surface in the pelvis will apply cold applications to the nose and explain that it is for the purpose of reducing congestion. It is elementary physiology that heat increases the coaguability of the blood and there is no reason why it should not be used on the nose as well as anywhere else. In my experience, heat to the nose is much more valuable in this condition than cold.

However, neither of these agents are directed at the cause of the bleeding. In five cases of bleeding in male children, from five to ten years of age, the hemorrhage decreased very rapidly when these children were given either gonadotropic or estrogenic hormone. These were given as Antuitrin-S and Theelin and it is significant that the bleeding did not recur for a much longer period of time than had previously elapsed between hemorrhages. The patients who were given Antuitrin-S responded in about the same manner as those given Theelin. One patient was given both at different times. He had a history of frequent nasal hemorrhage over many years. One hundred units of Antuitrin-S was given first and repeated in two days. The bleeding did not recur for six months and then upon recurrence 2,000 units of Theelin were injected and repeated in two days. This was eight months ago and there has been no recurrence.

One case of bleeding from the lip was rather remarkable. This was a white woman, age fifty-four, who had completed the menopause, but had severe headaches associated with flushes every four to six weeks. On one occasion she presented a most unusual sight. Her face and neck were so engorged with blood that she was almost cyanotic. The veins of her face stood out prominently and one on the lower lip had eroded and was bleeding profusely. It was obvious that to suture this small hole would merely produce two other bleeding points, so I applied a mucosa clamp to close the aperture. This did the work but was painful. I then, administered 10,000 units of Theelin and it was astonishing with what rapidity this engorgement subsided. Theelin was administered subsequently over several months and the whole syndrome disappeared.

Post-tonsillectomy bleeding is explained now in

two ways. The first is infection, and the second, sloughing of tissue. These did not appear to me to be reasonable but it was quite a while before the opportunity presented itself to test my theory in a case of this character. Eventually one did arrive which was in a boy nineteen years of age, from whom the tonsils had been removed eight days previously and who had bled profusely ten hours before I saw him. Within an hour after the administration of 10,000 units of Theelin, the bleeding had checked about two-thirds and within two hours ceased entirely. Nothing else was done and the patient had no further trouble.

Another case of interest was one in which I believe the emotions played a part. It is generally accepted that the emotions and the endocrine system are interlocked. This was a colored female about twenty-two years of age who began voiding bloody urine about three weeks after marriage. She was in a highly nervous and excitable condition, and the nature of the bleeding was such as to exclude all the local causes of bleeding and to indicate that it came from somewhere higher up in the urinary tract. Upon administration of Theelin the blood did disappear for a while but would recur. Cystoscopic study was done and it was discovered that the hemorrhage was coming from the left kidney but no definite lesion could be found. Attention was then directed to the nervous condition of this patient which seemed to be the result of her new marital state. When this was relieved through psychiatric means the bleeding disappeared and has not recurred in six months.

The compulsive nature of this bleeding may be shown by the case of a white woman, forty-eight years of age, who, five years ago, had a radium application for severe functional uterine bleeding. The flushes of the menopausal reaction were so severe that they nearly disabled her. Administration of large amounts of Theelin reduced these until she became quite comfortable, but after about a year she discontinued the injections. A few months later I was called to see her after she had been suddenly taken ill, when she presented the appearance of a patient in hemorrhage. No external hemorrhage was present, but the appearance of tarry stools soon indicated that she was bleeding from the gastrointestinal tract. She complained also of severe flushes but of no abdominal discomfort whatever. Her history of gastro-intestinal disturbances was completely

negative. I administered some Theelin to control the flushes and instituted other suitable measures, not thinking at the time that the bleeding could be associated with deprivation of Theelin. In due course of time, roentgen study of the stomach revealed a small peptic ulcer near the pylorus which was evidently of the silent variety. With continued administration of Theelin to control the flushes, the bleeding did not recur, but again she stopped coming for the injections and the bleeding did recur, although not so profusely. I feel that in this case the endocrine status of this patient would compel her to bleed from somewhere if it were left alone and the only avenue open to her was the stomach.

Abnormalities of menstruation are known to be due to endocrine factors and in many cases can be corrected by the use of the endocrine products we now have, but variations are so great and our knowledge so inexact that use of such endocrines is still in the empirical stage. Not that much is not known at this time, but from the clinical point of view, the practical value of what is known is not great. We may have two cases of identical bleeding which require different endocrine therapy.

Evidence is accumulating that a hematopoietic hormone is in existence and since each one has an antagonist—another physiological principle—a specific hemorrhagic one may be present also.

These illustrative cases are few and I am well aware of the fact that one swallow does not make a summer. As far as I know this is a new theory concerning some of these types of bleeding. My observations lead me to the conclusion that bleeding of this character is endocrine in nature and if it is possible to upset the endocrine status as it exists while the bleeding is present, not correct it but change it, the bleeding will stop. This, of course, negates the idea that the agents I have used so far have any specific action.

Failures may be due to the inability to change the endocrine make-up. With our present inexact knowledge of the physiology of the endocrines we are unable to properly evaluate the endocrine status as it relates to the blood of any individual. Endocrine measurements for individuals may be as different as their personalities or faces. Hence, in the attempts to change the conditions, at times we might be accentuating the malignant factors already present.

CARCINOMA OF THE CERVIX: STATISTICAL ANALYSIS OF THE CASES SEEN AT THE MEDICAL COLLEGE OF VIRGINIA.*

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This paper is an analysis of the new cases of carcinoma of the cervix seen on the service at the Medical College of Virginia during the past ten years, a period beginning on April 1, 1930, and ending on March 31, 1940. Only cases in which there was a histologic confirmation of the diagnosis were included. Accordingly, a few cases admitted during this period were omitted from this study. These omitted cases were not great in number and occurred, for the most part, in the earlier years of the period covered, in patients in whom the gross diagnosis was obvious. It is the practice at the present time to have biopsy confirmation in all cases.

The number of proven cases thus selected during this period totaled 237, and accordingly formed the material for this report.

The series of cases was analyzed with respect to the annual, racial, age, stage, and grade distributions. The presence of syphilis and the condition of parity were noted and recorded, because of the possibility of these conditions being agents in the production of chronic irritation and thus being possible factors in the etiology of carcinoma.

Annual Distribution: When the cases were separated according to the year in which each case was first admitted to the hospital for carcinoma of the cervix, the result showed a striking rise in the number of cases admitted annually during the period under study. Whereas only nine patients were admitted during the last nine months of 1930, or an estimated twelve cases for the entire year, and while only nine cases were admitted during 1931, there then was shown a marked increase in these admissions, so that finally in 1939 forty-three such cases were admitted. The number of carcinoma of the cervix admissions

From the Departments of Surgery and Gynecology, Medical College of Virginia.

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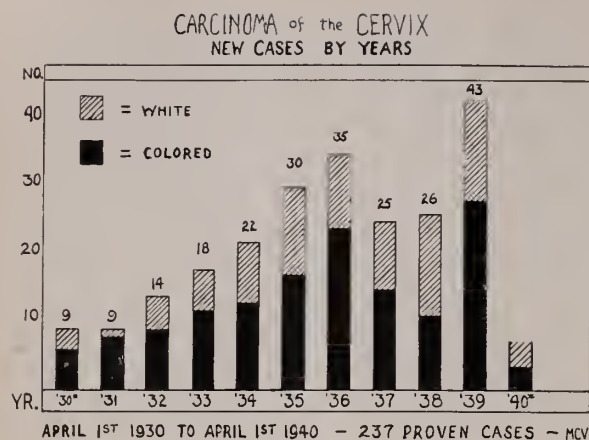


CHART I.

TABLE 1.

NEW CASES OF CARCINOMA OF THE CERVIX ADMITTED

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
White -----	3	1	5	6	9	13	11	10	15	15	3
Colored -----	6	8	9	12	13	17	24	15	11	28	3
Total -----	9*	9	14	18	22	30	35	25	26	43	6†

*Nine months only.

†Three months only.

in 1939 was therefore 300 per cent to 400 per cent of the number of similar admissions in 1930 and in 1931, respectively.

Chart I and Table 1 illustrate the increase in cases, and show also the relative number of white and negro cases, a subject to be spoken of later.

It immediately became interesting to know whether there was a corresponding increase in the number of general admissions to the hospital during the same period. Examination of the figures for general admissions to St. Philip and Memorial Hospitals showed that there was not a correspondingly great rise in these admissions. The number of general admissions to these hospitals rose from 7,729 for the twelve months of 1930 to 9,972 for the year of 1939, an increase of approximately 30 per cent. The relative increase in the cases of carcinoma of the cervix was therefore approximately ten times greater.

again, it became desirable to compare these figures with those for the general hospital population. It was found that during the past ten years there were 52,685 general white and 40,475 general negro admissions to St. Philip, Memorial, and Dooley Hospitals. These figures included men, women and children of both races, as it was not possible to procure separate figures for women. Thus, the white patients admitted were in excess of the colored. Therefore, the higher number of colored carcinoma of the cervix cases could not be accounted for by a greater number of colored admissions, as the latter condition did not obtain.

Age Incidence: The youngest case in this series was that of a colored girl of twenty-four years.

There was a white girl of twenty-five years. One colored woman gave her age as eighty, and one white woman was seventy-nine. These were the two oldest cases. When the ages were divided into decades it

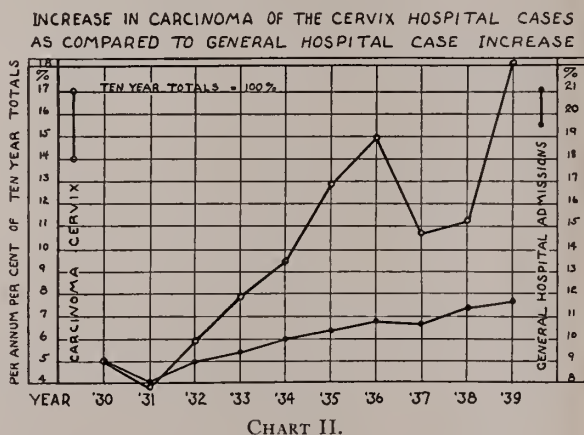


TABLE 2.

GENERAL ADMISSIONS TO MEMORIAL AND ST. PHILIP HOSPITALS

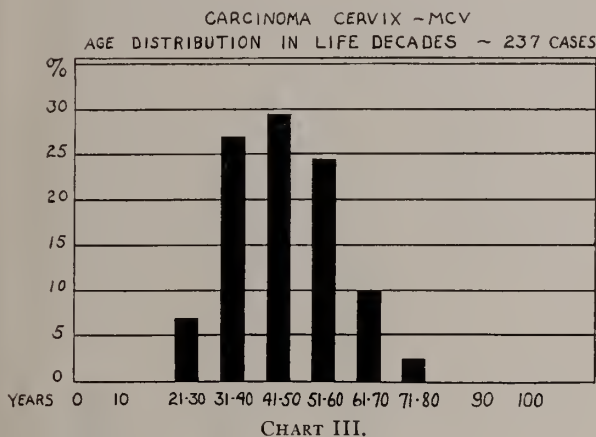
1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
7729	6858	7795	8082	8458	8829	9146	9106	9643	9972

Race Incidence: It has been noteworthy in observing this series that the number of cases occurring in the colored race has been considerably in excess of that in the white race. Of the 237 herein reported, 146, or 62 per cent, were in the colored race. Here,

was found that 7 per cent were in the third decade. The fourth decade showed a marked increase, reaching 27 per cent. The highest incidence was in the fifth decade, 30 per cent occurring during this period. Twenty-four per cent of the cases occurred in the

TABLE 2-A.
COMPARISON OF WHITE AND COLORED ADMISSIONS FOR TEN-YEAR PERIOD

	CARCINOMA OF CERVIX		GENERAL ADMISSIONS	
	NUMBER	%	NUMBER	%
White -----	91	38	52,685	57
Colored -----	146	62	40,475	43
Total -----	237	100	93,160	100



of the cervix. For the sake of uniformity in world-wide reports, the League of Nations, in 1929, adopted definitions of stages in this disease. This organization in that year divided the stages into four groups as follows:

Stage I. The growth is strictly limited to the cervix uteri. Uterus mobile.

Stage II. Lesions spreading into one or more fornices, with or without infiltration of the parametrium adjacent to the uterus, the uterus retaining some degree of mobility.

Stage III. (a) Nodular infiltration of the parametria on one or both sides extending to the wall of the

TABLE 3.

DECADES	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
Number -----	0	0	16	64	70	58	23	6	0	0
Per cent -----	0	0	7%	27%	29.5%	24.5%	9.7%	2.5%	0	0

sixth decade. Following this there was a rapid drop.

We had gained the impression that not only were the colored cases more frequent but also that the disease tended to occur at a somewhat earlier age in the colored race. When separate curves were made of the age distribution in the two races, there was considerable similarity in the two curves. However, the comparison showed that the disease did tend to occur at a slightly earlier age in the colored group in our series. In these curves the ages were broken up into five-year groups. The figures show that in each race the highest incidence was in the group thirty-six to forty years.

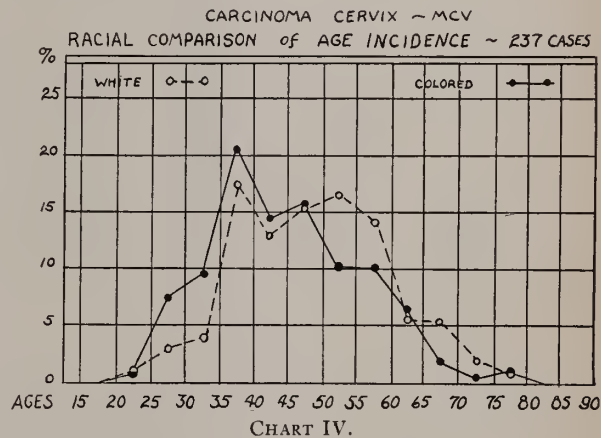


TABLE 4.

AGE GROUP	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80
Number of Cases:												
White -----	1	3	4	16	12	14	15	13	5	5	2	1
Colored -----	1	11	14	30	21	23	15	15	10	3	1	2
Total -----	2	14	18	46	33	37	30	28	15	8	3	3
Per cent:												
White -----	1%	3%	4%	18%	13%	16%	17%	14%	6%	6%	2%	1%
Colored -----	1%	8%	10%	21%	14%	16%	10%	10%	7%	2%	1%	1%

Stage of the Disease: The stage of the disease at the time of treatment is perhaps the most important single factor of prognostic importance in carcinoma

pelvis, with limited mobility of the uterus or massive infiltration of one parametrium with fixation of the uterus.

(b) More or less superficial infiltration of a large part of the vagina, with a mobile uterus.

(c) Isolated metastases in the pelvic glands, with a relatively small primary growth.

(d) Isolated metastases in the lower part of the vagina.

Stage IV. (a) Cases with massive infiltration of both parametria extending to the walls of the pelvis.

(b) Carcinoma involving the bladder or rectum.

(c) The whole vagina infiltrated (rigid vaginal passage), or one vaginal wall infiltrated along its whole length, with fixation of the primary growth.

(d) Remote metastases.

In 1937 the League of Nations modified somewhat these definitions.

In our series of cases it was possible, by original examination or by study of the records, to estimate the stage in 220 of the cases. Following the League of Nations' definition of 1929, these 220 cases were divided into the four stages as follows:

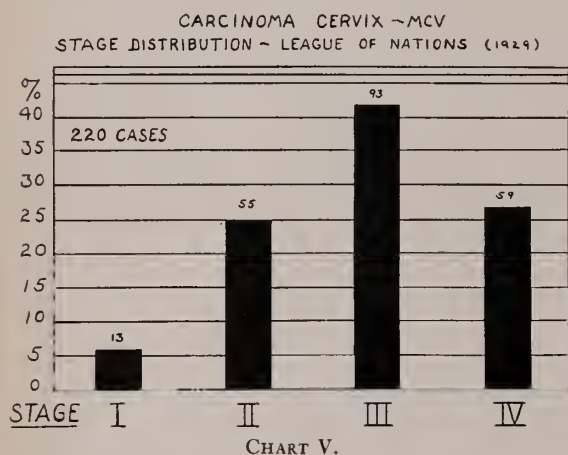


TABLE 5.

STAGE OF DISEASE (LEAGUE OF NATIONS, 1929)					
STAGE	I	II	III	IV	TOTAL
Number	13	55	93	59	220
Per cent	6%	25%	42%	27%	100%

It is seen that only 6 per cent were in the most favorable or so-called operable group. Twenty-five per cent were in the group of so-called border-line operability. Sixty-nine per cent, or two-thirds of the cases, were in the advanced stages, represented by III and IV. Grouped according to race, 75 per cent of the colored cases were in stages III and IV, and 58 per cent of the white cases were in these two stages.

Cell Type and Grade: Of the 237 cases in this series, eight, or 3 per cent, had adenocarcinoma.

Two hundred and twenty-nine, or 97 per cent, had squamous cell carcinoma.

In 186 cases the Department of Pathology graded the carcinoma according to the Broders' classification, many being graded by Dr. Broders himself. This grading classifies the cases according to the degree of malignancy, as indicated by the histologic picture. The distribution of cases in our series by this method was as follows:

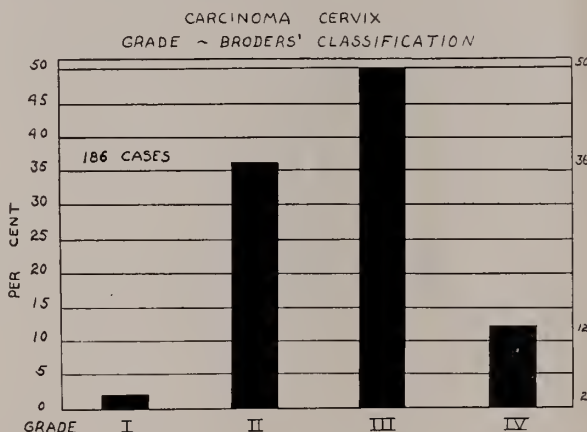


CHART VI.

TABLE 6.

GRADE OF MALIGNANCY, BRODERS					
GRADE	I	II	III	IV	TOTAL
Number	3	67	93	23	186
Per cent	2%	36%	50%	12%	100%

Syphilis: The possible role of syphilis in predisposing to carcinoma of the cervix was considered. It was determined how many of these cases had syphilis so far as the presence of a positive serum test indicated the latter disease. The Wassermann or Kline reactions were recorded on 221 of the cases in this series. Twenty-two per cent of these cases had positive reactions. Divided into races the reaction was positive in 8 per cent of the white cases and in 30 per cent of the negro cases.

It became of interest to compare these figures with a comparable group of cases which did not have carcinoma of the cervix. For this comparison, figures obtained from Dr. Wampler were used. He studied the cases first reporting to the Medical Clinic of the Medical College of Virginia Out-Patient Department from January, 1929, to December, 1933. He found that 29.2 per cent of the colored women and 4.8 per cent of the white women had positive Wassermann reactions. Of both groups 18.8 per cent had positive Wassermann reactions.

These figures of Dr. Wampler's were very close to

those found for the carcinoma of the cervix cases, the latter being only slightly higher in each instance.

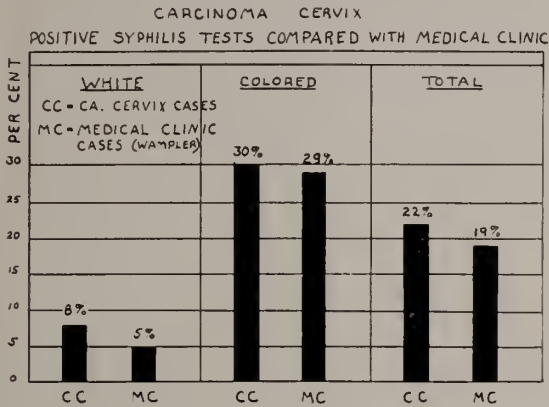


CHART VII.

TABLE 7.

POSITIVE WASSERMANN OR KLINE REACTIONS

	WHITE	COLORED	BOTH
Carcinoma of cervix	8%	30%	22%
Medical Clinic	4.8%	29.2%	18.8%

(Dr. Wampler)

Parity: Childbirth produces cervical lacerations which might become infected and be the cause of chronic irritation. Only between 4 per cent and 5 per cent of our cases were nulliparous. However, in a collected series of 1,289 cases reported by Lynch, 15.3 per cent were nulliparous. The nulliparous portion of the adult female population, based on the figures of the 1930 United States census quoted by Lynch, was between 10 and 20 per cent.

Family History: The study of the family history in these cases seems to be of little value. It is probable that very few people have accurate knowledge of what other members of their family died of. In 16 per cent of these cases there was no family history recorded. A positive family history was obtained in only 7 to 8 per cent of the cases. In a series of 375

cases, Lynch found a positive family history in 28 per cent.

The "normal incidence" of cancer, based on a study by Dublin of the Metropolitan Life Insurance Company, was 6 per cent.

SUMMARY

Two hundred and thirty-seven cases of proven carcinoma of the cervix, admitted to the Hospital Division of the Medical College of Virginia during the ten-year period, April 1, 1930, to March 31, 1940, have been statistically analyzed with respect to annual distribution and to race, age, stage, and grade incidence, and with attention to the presence of syphilis, parity, and a positive family history.

CONCLUSION

It was the purpose of this paper to present the figures which have been presented herein, and no attempt was made within this paper to speculate upon the meaning of the figures presented. Due to the limited number of cases in this series, the figures herein obtained would be best considered in conjunction with reports from elsewhere as only a part of a collected series of much larger dimensions.

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FREQUENCY OF SPINA BIFIDA.

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To determine the relative frequency and degree of the abnormalities of the spine, a series of 1,500 consecutive cases have been carefully studied by complete physical, laboratory, and X-ray examinations. Two hundred and thirty-five of these 1,500 were

found to have definite congenital or acquired abnormalities of the spine. In addition to these 235, there were 110 cases of spinal arthritis, two cases of tuberculosis, and two of metastatic carcinoma. The frequency of arthritis bears some relation to spinal

abnormalities, for, though its frequency in the total group was only 7.03 per cent, it was present in 14.88 per cent (thirty-five of the 119) of those having abnormalities. Where a congenital defect was present, there was a higher incidence of acquired defects, there being eighty-four acquired and 179 congenital defects in the 235 spinal columns, twenty-eight of the congenital having also an acquired defect. The frequency of acquired defects in the total group of 1,500 was 5.6 per cent. In the subgroup that had no congenital anomalies, the frequency was only 4.52 per cent, in contrast with a frequency of 10.72 per cent in the subgroup that had congenital anomalies.

The abnormalities found in the order of their frequency were:

	NUMBER
1. Spina bifida (3 cervical, 3 thoracic, and 3 lumbar) -----	83
2. Scoliosis (of a degree sufficient to be called definitely abnormal) -----	62
3. Sacralization of the 5th lumbar vertebra (8 complete) -----	63
4. Incomplete bilateral sacralization -----	12
5. Unilateral sacralization -----	32
6. Partial sacralization -----	11
7. Lordosis -----	33
8. Kyphosis -----	11
9. Lumbarization of the first sacral vertebra ----	25
10. Lumbar ribs -----	10
11. Abnormalities of the fifth lumbar vertebra ----	12
12. Cervical ribs -----	5
13. Disc abnormalities -----	2
14. Blocked vertebra (1 cervical and 1 lumbar) --	2
15. Klippel-Feil syndrome with absence of two cervical vertebrae -----	1
16. Sprengel's deformity -----	1
17. Hemivertebra -----	1
18. Spondylolisthesis -----	1

Donaldson lists those found by him in the following order:¹

1. Sacralization of the fifth lumbar vertebra.
2. Lumbarization of the first sacral vertebra.
3. Cervical rib.
4. Unilateral anomalous development of the sacrum.
5. Spina bifida.
6. Variation in number of thoracic ribs.
7. Sprengel's deformity.
8. Intercalation of a whole or portion of a vertebra.
9. Nondevelopment of one side of the centrum.
10. Fusion of two vertebrae without formation of the disc.

This series of 1,500 roentgenological examinations of the spine revealed eighty-three, or 5.53 per cent.

definite bifida. Giles² found 23.9 per cent, although these may not all have been actually spina bifida occulta if he included minor posterior fusion defects of the first sacral vertebra. Theodora Wheeler³ found 23 per cent bifida of the last lumbar and 13 per cent of the first sacral vertebra. These figures probably include minor posterior fusion defects.

The term was first used by Nicolaas Tulp,⁴ a Dutch physician, who found six cases with an external mass. He performed operations upon three of these cases, all of whom died. His conclusion was that "surgeons should not open such a tumor and should carefully avoid the bad reputation which will invariably result from doing so." Tulp, in 1632, was the subject of Rembrandt's "Anatomy" at the Hague. He wore the short lace-edged collar which was a sign of wealth or distinction.⁵

In this series, which were almost entirely adults, there was only one spina bifida cystica which was in a man thirty-two years of age. This defect originated in a cleft of the second thoracic vertebra. It was a meningocele, as are nearly all spina bifidas above the lumbar region. Surgeons often have hesitated to operate upon meningoceles for fear of the development of hydrocephalus. Cutler⁶ stated that "while modern surgery has made amputation of the sac safe from meningitis, it may be justly accused of causing death by hydrocephalus." While the cerebrospinal fluid is formed from the choroid plexus, it is absorbed by the arachnoid tissue, and, where the sac is amputated, some absorbing tissue is taken away. But if the meningocele sac is dissected out and all the arachnoid tissue is preserved, hydrocephalus does not develop post-operatively.⁷ The location of the bifida in a thoracic-vertebra is not common. Wheeler⁸ found no evidence of spina bifida in 3,000 thoracic vertebrae. Sunderland⁹ in a series of 12,000 cases found 1.17 per cent of the five lumbar and 3.6 per cent of the first and second sacral vertebra.

Spina bifida occulta is a developmental deformity in which there is a cleft in the lamina of one or more vertebra without any external sac. While there is no external malformation of the spinal cord or the meninges, there may be external manifestations, such as hypertrichosis, which is the most striking, but the occurrence of which is only in 4 per cent. Virchow, in 1875, was the first to demonstrate this association of hypertrichosis with an opening in the vertebra.¹⁰

Other signs such as a subcutaneous lipoma, a

telangiectasis, or a dimple on the skin, may mark the underlying defect in the vertebral arch. In the four cases of this series of cervical and thoracic involvement, hypertrichosis was found in one, a lipoma with telangiectasis in one, and a dimple of the skin in another. The other case had an associated Sprengel's deformity to call attention to the defect.

Bony closure of the posterior vertebral arches begins in the lumbar region and proceeds upward and downward. Ossification begins at birth or earlier, and the spinous processes of the lumbar and first sacral vertebra are ossified by the third year.

The great majority of the cases of spina bifida occulta are in the lumbosacral region, leaving a gap at the site of the spinous process produced by non-fusion of the lamina. While many defects appear to be harmless, the study of the entire series shows that this abnormality must be considered a factor for potential trouble. The defect may be in the median line, or, as in ten cases of this series, to one or the other side. This defect, which encroaches upon the lamina and may involve the inferior articular processes, must therefore cause a loss in the stability of the vertebral column, both from the loss of articular surface and from the lack of bone surface to which important muscles and ligaments are usually attached. Stability may also be affected by the change in ligamentous attachments, especially the interspinous ligaments, which lack the anchorage of the spinous process. This admits of an excess of mobility of the spinal column, with consequent damage to other structures by strains and sprains. Scoliosis was found present in fourteen of the eighty-three cases, or 16.84 per cent of the cases of spina bifida, while in the remaining 1,417 only twenty-nine additional cases were found. Lordosis was associated with four of the eighty-three (4.97 per cent) cases of spina bifida, lumbarization with nine, and sacralization with four.

Von Recklinghausen¹¹ was responsible for first calling attention to the associated abnormalities of spina bifida occulta by his case of congenital clubfoot, hypertrichosis, and spina bifida occulta. Since the spine grows faster than the cauda equina, symptoms due to stretching of the roots may not appear until adolescence or adult life. Clubfeet of the different varieties (pes cavus, pes planus, talipes varus, and valgus) are so often associated with spina bifida, spina bifida occulta being present in 60 per cent, that every case of clubfeet should have an X-ray examination of the lower spinal column. Syringomyelia,¹²

trophedema, and perforating ulcer have been frequently due to nerve lesions caused by spina bifida occulta. Another important result of spina bifida is urinary incontinence and enuresis. Sixty-eight per cent of all adults suffering with nocturnal enuresis have spina bifida occulta, and of these 50 per cent are curable by operation.¹³ There may be anesthesia involving the buttocks and the perineum. Uterine prolapse of nulliparae is nearly always due to a spina bifida occulta by involvement of the fourth sacral nerve, with consequent paralysis of the levator ani muscles.

Lumbosacral pains are frequently found in individuals with spina bifida occulta, and the question arises as to whether there is a cause-and-effect relationship. Many having clefts of the neural arch have no pains, and it is apparent that they have sufficient compensation for this deficiency, especially in earlier years when the spine is more flexible and the muscular development more adequate. However, in a majority of cases, careful inquiry will elicit a definite history of physical limitation, especially if certain strenuous exercises or movements are performed. In this group, there were twenty-two patients (or 26.7 per cent) complaining of lumbosacral pains or recurrent attacks of sciatica, while the percentage in the whole series was only 4.1 per cent. These cases have a higher predisposition to strain, sprains, and spondylolisthesis.¹⁴

The cause is evidently not related to hydrocephalus or internal pressure, as this developmental anomaly has taken place before the cerebrospinal fluid is formed from the choroid plexus. The choroid plexus does not begin to secrete fluid until about the tenth week, while the neural tube is completely closed at about the end of the third week of embryonic life. It is a complex fundamental process concerned with the development and cleavage of the tissues of the spinal cord, meninges, and perineural tissues. Hertwig¹⁵ has produced experimental evidence that the altering of the physical or chemical environment of embryos by using toxic substances or exposure to X-ray or ultraviolet rays will produce malformations of the central nervous system such as spina bifida and related developmental defects. It appears to be acquired and not inherited. Woltman¹⁶ found in a review of 187 cases, including the three associated cases of myelodysplasia without demonstrable bone defect, only ten with a history of any form of congenital defect.

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REPORT OF A CASE OF DIABETIC COMA COMPLICATED BY PNEUMONIA.

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and
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This patient was an under-nourished, asthenic white male, sixteen years of age, who was admitted to the Lewis-Gale Hospital on November 20, 1939, at 6 P. M., in a comatose state. On admission, the history obtained from his parents was as follows:

The patient had been in coma since 11 A. M. There was a history of a respiratory infection, beginning about ten days before his admission to the hospital. The parents stated that he had been complaining of some weakness with general malaise for some weeks previous to the onset of coma. For several months he had had frequency of micturition, particularly at night, and had been drinking large quantities of water. During the past six months, he had lost from ten to fifteen pounds in weight. A history was obtained that he was not seen by a physician until he had passed into coma.

Examination revealed a white male, approximately sixteen years old, very much under-nourished, in a state of deep coma and shock. Rectal temperature on admission was 101°. The skin was definitely dry, both the upper and lower extremities were cold, and

the pulse was barely perceptible at the wrist. The pupils were contracted and reacted sluggishly to light. The eye balls were soft. The nose and throat were essentially negative. Respiration was definitely increased, but the respiratory movements were of short excursion. The lungs revealed evidence of a definite lobar pneumonia in the right base, posteriorly. The heart rate was markedly increased, being 130 at the time of admission; the muscular element was fair, and no murmurs could be elicited. An accurate blood pressure could not be obtained due to the severe degree of shock. Examination of the abdomen revealed evidences of upper abdominal distention, but there was no rigidity present. The deep reflexes were very much diminished, and there was no response on the part of the patient to any type of external stimuli. There was no rigidity of the muscles of the neck and back.

Although a diagnosis of diabetes mellitus had not previously been made, from the history obtained from the parents and from the clinical findings it was our impression that this patient had pneumonia, com-

plicated by diabetic coma. The patient was immediately catheterized; however, there was no urine present in the bladder although the mother stated that he had not voided since early morning. The catheter was left in the bladder, and 1,000 c.c. of normal saline was then given intravenously. In a few minutes after the saline solution was begun, sufficient urine was obtained for examination which revealed the presence of sugar, acetone, and diacetic acid. The patient was then given 60 units of insulin subcutaneously. Two hours later, he was again given 40 units of insulin and a 5 per cent solution of dextrose in saline. Approximately the same amounts of insulin and saline with dextrose were given at four-hour intervals until morning.

At 8 A. M. the patient was slightly improved and responded slowly to questioning. The pulse rate had dropped from 130 to 110, and the blood pressure was 80/50. The blood sugar estimation at 8 A. M. was 290 mgm. per 100 c.c. of blood. The blood urea estimation at the same time revealed a dehydration urea retention of 160 mgm. per 100 c.c. of blood. X-ray examination of the chest was taken at this time and revealed lobar pneumonia at the base of the right lung. Thirty-five units of insulin and 1,000 c.c. of 5 per cent dextrose in saline were continued at six-hour intervals. By noon of the first hospital day, the patient was able to take fluids by mouth, and he was then started on sulfapyridine.

Second Hospital Day: At 6 A. M. of the second day, the patient was given 1,000 c.c. of 5 per cent dextrose in saline and 25 units of insulin. At that time his general condition appeared much improved, although his response to questioning was still slow. An attempt was made to place the patient on a semi-liquid diet with adequate insulin, but at 8 P. M. on the evening of the second day it was noted that the patient had again passed into a semi-comatose state. The possibility of insufficient saline administration during the twelve-hour period was brought to mind, and the patient was immediately given intravenous saline. A decided improvement was noted on the completion of this administration.

Third Hospital Day: The patient was definitely improved, apparently more rational, and answered questions more readily. Blood sugar estimation at 8 A. M. was 80 mgm. per 100 c.c. of blood. At this time the patient's heart rate was 110, and his blood pressure was 95/70. Since he could take nourishment by mouth, he was given a semi-soft diet con-

taining approximately 1,100 calories, with 20 units of insulin before each feeding.

The patient at this time developed a dermatitis medicamentosa which was probably due to sulfapyridine, and the drug was discontinued. He also developed symptoms of a peripheral neuritis, and since there was evidence of a vitamin B₁ deficiency, he was given 20 mg. of thiamine chloride three times daily.

Fourth to Fourteenth Hospital Days: For the next ten days, his improvement was rapid; however, the lung findings remained unchanged, both by physical and X-ray examination. His temperature ranged from 99° in the morning to 101° in the evening.

Fourteenth Hospital Day: The patient developed a sharp pain in the lower right chest, and his temperature arose to 102°. Physical and X-ray examination at this time revealed evidences of a pleurisy of the right side.

Sixteenth Hospital Day: There were physical findings of a pleural effusion on the right side, and an aspiration was done with the resultant withdrawal of 300 c.c. of straw-colored fluid tinged with blood. Laboratory examination of the fluid revealed an occasional lymphocyte and polymorphonuclear leukocyte. No bacteria were found. From this point, the patient continued to run a temperature ranging from 100° in the morning to 102° in the evening. Repeated aspirations were done; however, very little fluid was withdrawn at any one aspiration.

After one week, the patient was again aspirated, and purulent material was withdrawn. Microscopic examination revealed the presence of numerous pneumococci which were non-typeable. At this time the patient was transfused, and the pleural effusion was drained by the use of a Lloyd's catheter. Immediately after drainage was established, he had a temporary return of his temperature to normal. Irrigations of the pleural cavity with Dakin's solution were begun; however, it might be stated that the patient failed to respond as one would desire.

Because of the fact that we had previously obtained pneumococci by smear and culture from this fluid, it was decided that irrigations of the pleural cavity with a solution of sulfanilamide and sulfapyridine combined should be done. These irrigations were instituted. The patient's temperature returned to normal immediately and remained there until his dismissal from the hospital. After removal of the tubes, there was very little drainage for the next few days, and the wound healed rapidly. He was dis-

missed from the hospital on February 1, 1940.

It may be stated that during the interval in which the patient was developing numerous complications, his blood sugar had always been well in hand, and his diabetes had been under control. As the infection responded to therapy, the patient required less and less insulin, and since his dismissal from the hospital, his insulin requirement ranges from 25 to 30 units of protamine insulin in twenty-four hours. Examination of his chest on June 30, 1940, revealed normal lung findings. His weight at this time showed a gain of nine pounds.

COMMENTS

It may be stated that this case has presented numerous interesting phenomena. First: A patient who had previously shown moderate symptoms of diabetes mellitus was thrown into a profound diabetic coma by a respiratory infection. Second: Massive doses of insulin were required to bring this patient out of coma. Third: The value and necessity of intra-

venous saline in the handling of a patient in diabetic coma was demonstrated. It may be seen on reviewing the case that, on withdrawal of the saline, the patient again went into a semi-comatose state. However, following the administration of further saline, he recovered immediately. Fourth: The value of vitamin B₁ in the handling of a case of diabetic acidosis was evident. It has already been shown that a deficiency in vitamin B₁ storage is present in individuals in diabetic coma; and with the administration of large quantities of carbohydrates, there is a further demand for B₁, thereby bringing about a definite B₁ deficiency. Consequently, it would seem that the administration of vitamin B₁ parenterally is beneficial in the treatment of a case of diabetic coma. And last, but not least, the value of sulfanilamide and sulfapyridine irrigations in empyema due to organisms which respond to these drugs is emphasized.

Lewis-Gale Hospital.

HYDRAMNIOS—BRIEF REVIEW OF THE LITERATURE WITH REPORT OF TWO CASES.*

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The average amount of amniotic fluid is about 1,000 cubic centimeters and quantities up to 2 or 3 liters are not infrequent; however, very large amounts—30 liters have been reported—are not common, and, because of the severe complications which often accompany an acute hydramnios, we believe that a brief reconsideration of the subject will be of value to all who may be called upon to deal with obstetrical difficulties.

The etiology of hydramnios is unknown; obviously, it must be due to either excessive formation and/or deficient absorption of amniotic fluid. Among the etiological factors suggested are:

1. Malformation of the fetus. The excessive amount of fluid being due to transudation from insufficiently covered blood vessels.

2. Conditions obstructing venous circulation in the fetus.

3. Conditions causing an increase in the amount of fetal urine.

4. Amnionitis leading to inflammatory and degenerative changes of the amnion.

Chronic hydramnios with a gradual accumulation of a moderate excess of amniotic fluid is not unusual; however, an acute hydramnios usually beginning during the latter part of the second trimester of pregnancy is very rare.

It has been suggested by Goodall *et al* that in many cases inflammation of the amnion will explain the formation of hydramnios as well as the type of associated anomalies. Suggested pathological physiology is as follows: the primitive neural tube is formed by the folding of the neural plate into an epithelial tube. This groove begins to close in embryos of four weeks near the middle of the body, and closure advances in both directions, the neuroporic openings at each end of the neural tube closing last, soon after the fourth week. Consequently, it is sug-

*Read before the staff of The Winchester Memorial Hospital.

gested that infection of the amnion after closure of the neural tube would give rise to an increase in the amount of fluid and formation of adhesions, but that normal babies or those with deformities resulting from adhesions would be expected, whereas, infection of the amnion before closure of the neural tube and subsequently gaining access to the tube, would lead to deformities depending upon the stage of development of the neural tube. Infection in the neural tube occurring before closure of the tube would cause hypersecretion and increased spinal pressure, and, therefore, incomplete closure with the formation of spina bifida. Very early infection in the neural tube would inhibit normal growth of nervous tissue with the formation of anencephaly. Our two cases seem to lend support to this theory; however, it must be remembered that hydramnios does occur in the absence of fetal deformity, and in the absence of any demonstrable infection of the amnion. The findings of Dr. Murray Angenine, of New York, revealed that, of fifteen pregnancies with anencephalic monsters, ten had hydramnios, and, of nine cases examined, five revealed the presence of choroid plexus tissue at the brain site, which still leaves the question as to whether an early infection of the amnion and neural tube gave rise to hydramnios and the anomalies or whether exposed blood vessels at the site of the anomalies caused hydramnios. Experiments of Dr. Carmac Rivett—(a) Injection of indigo carmine into liquor amnii with none recovered in mother's urine, (b) Insulin injected into liquor amnii with no effect on blood sugar of mother—would seem to lead one to wonder about the frequency of metastatic infection of the amnion which, as a reversible phenomenon, is difficult to prove.

Symptoms arising from the greatly increased size of the uterus are: pain in the back, abdomen, thighs and legs, edema of the lower extremities, dyspnea, and, not infrequently, nausea and vomiting. The uterus is abnormally large and the abdomen is distended, tight, and tender.

When considering the treatment of this condition, the dangers associated with the release of amniotic fluid must be carefully considered. Sudden evacuation of the fluid frequently causes severe shock and if a premature separation of the placenta occurs, which not infrequently happens, the shock is further accentuated. Prolapse of the cord may be a serious complication. Abnormal distention of the

uterus with loss of contractile power often causes post-partum hemorrhage.

Repeated paracentesis uteri has been suggested by physicians on the continent and Dr. Carmac Rivett reported ten cases with very satisfactory results. Other writers, too, have reported similar results. Any evidence of fetal anomaly would certainly lessen indications for this procedure. Dr. Krahula in 1921, collected the records of a series of patients with hydramnios and, of 151 single deliveries, sixty-four pairs of twins, and three cases of triplets, 103 were still-born and seventy-six died soon after birth. Thus, we see that our present methods of treatment leave much to be desired.

Treatment in this country continues to be limited largely to artificial rupture of the membranes, allowing the fluid to escape very slowly, oxytocics and complete packing of the uterine cavity following delivery. Intravenous fluids, including transfusions, are used, if needed, for shock and hemorrhage.

Case 1: GIII, PII, MO, age twenty-four years. Referred to the Hospital Division of the Medical College of Virginia, 9-8-36, because of pregnancy complicated by an abnormal progressive enlargement of the abdomen, dyspnea, tenderness of the abdomen, and pain in the lower extremities. L. M. P. January 15, 1936. At term October 22, 1936. Obstetrical history not significant except for a mild toxemia during the first pregnancy.

Two weeks prior to admission the patient noticed that her abdomen was becoming very large and she soon began to develop symptoms resulting from abdominal distention. Physical examination revealed an excessive enlargement of the abdomen due to an acute hydramnios. Fetal heart sounds not audible, B. P. 138/85.

Following artificial rupture of the membranes, 5,500 cubic centimeters of amniotic fluid were allowed to slowly drain from the uterus. Soon after removal of the fluid uterine contractions became very strong and frequent, giving rise to a complete premature separation of the placenta. A still-born fetus and the placenta delivered spontaneously accompanied by rather severe vaginal bleeding. Hemorrhage was controlled by complete packing of the uterine cavity and shock combated by giving intravenous fluids and other supportive treatment. There was no fetal deformity. Pathological examination of the placenta revealed a chronic decidual endometritis.

Case 2: GI, PO, MO, age nineteen years. This

patient was first seen by Dr. F. T. Hauser, of Purcellville, Virginia, in January, 1940. At that time she had an upper respiratory infection and stated that she had been having similar trouble for several weeks. L.M.P. August 7, 1939. Term May 14, 1940.

She was seen again in February at which time the abdomen was much distended and the patient complained of dyspnea and pain in the lower extremities.

The membranes ruptured that same afternoon with a sudden escape of a very large quantity of amniotic fluid. A stillborn fetus and the placenta delivered spontaneously. The uterus contracted satisfactorily under the influence of oxytocics and remained so for several hours, following which complete relaxation occurred. Vaginal bleeding became rather profuse and the patient was referred to the Winchester Hospital. Physical and laboratory examinations revealed a severe secondary anemia: R. B. C. 1,910,000, Hb. 40 per cent, vaginal bleeding, and a relaxed uterus filling the entire lower abdomen. Following transfusion, a large amount of clotted blood was removed from the vagina and uterus and the uterine cavity completely packed. Convalescence was uneventful except for persistence of a mild upper respiratory infection. Many fingers and toes of the fetus were amputated and others deformed.

SUMMARY

Acute hydramnios is a very rare but serious complication of pregnancy. Two cases, one with a persistent upper respiratory infection, which may have acted as a focus of infection, and another with a chronic decidual endometritis have been presented. Amnionitis occurring after closure of the neural tube may have been the etiological factor in these two cases. Each case represents one of the more serious complications which may occur in the presence of an acute hydramnios. Treatment for this condition, even when occurring late in pregnancy, is not satisfactory and the possibility of premature separation of the placenta, postpartum hemorrhage and shock must be recognized.

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DISCUSSION

DR. L. M. ALLEN: I am, of course, interested in the etiology of hydramnios but the practical part is the treatment, and in this country, this is artificial rupture of the membranes with slow removal of the amniotic fluid.

Personally, I have not had any cases of premature separation of the placenta associated with this condition. My opinion of the second case reported is that the patient bled because the uterus did not contract and remain contracted satisfactorily.

It is necessary to watch carefully and see that the uterus remains contracted. The after-care of the patient is very important, and careful watching to be sure that the uterus contracts properly is necessary. These patients need time and must not be delivered too quickly; slow delivery is Nature's method of counteracting this condition.

Slow removal of the amniotic fluid, slow delivery, and careful observation of the patient for quite a long time following labor will prevent complications.

Correspondence

Growth of Hospitalization in Richmond, Virginia, and United States (1920-1940).

December 10, 1940.

TO THE EDITOR:

In compliance with your request for statistics for your use in the VIRGINIA MEDICAL MONTHLY, I am enclosing a graph which depicts what has occurred in the United States of America, in Virginia and in Richmond, since 1920 through 1939; also statistics on the Richmond Hospital Service Association beginning with January, 1936.

For each of the units of population on the graph is shown the total beds, the percentage of increase in beds since 1930, the number of admissions to hospitals, the increase in admissions since 1934, the average stay of patients, the percentage of occupancy of patients and the ratio of admissions to the population.

It seems pertinent to make certain observations regarding this graph. You are, I am sure, familiar with the hospital number of *The Journal A.M.A.* Their March 30, 1940 issue, page 1160-1161 shows the number of general hospital beds per thousand of

TABLE FOR GROWTH OF HOSPITALIZATION IN RICHMOND, VIRGINIA, AND THE UNITED STATES

	1920	1925	1928	1930	1932	1934	1935	1936	1937	1938	1939
RICHMOND											
Total beds.....	1,046		1,011	1,000	1,015	987	987	1,002	1,020	1,074	1,073
% increase since 1930.....					1%	-1%	-1%	0	2%	7%	7%
% of occupancy.....	61%	72%		64%	66%	67%	72%	75%	80%	77%	83%
Admissions.....					22,079	21,777	22,658	25,220	27,260	27,628	29,507
% increase of admissions since 1934.....							4%	11%	25%	27%	36%
Ratio admission to population.....				1 in 9			1 in 9	1 in 8	1 in 7	1 in 7	1 in 7
Average stay.....							11 days	11 days	11 days	11 days	11 days
VIRGINIA											
Total beds.....	4,768		5,815	5,846	7,389	6,428	6,640	6,433	6,951	7,593	7,813
% increase since 1930.....					24%	10%	14%	10%	19%	30%	33%
% of occupancy.....	67%	61%		60%	61%	57%	58%	64%	71%	66%	65%
Admissions.....					105,647	95,129	106,714	120,582	136,661	136,923	151,156
% increase of admissions since 1934.....							12%	27%	43%	44%	59%
Ratio admission to population.....					1 in 23		1 in 23	1 in 20	1 in 18	1 in 18	1 in 15
Average stay.....											9.16 days
UNITED STATES											
Total beds.....	311,159		363,337	371,609	395,543	393,425	406,174	402,605	412,091	425,324	444,947
% increase since 1930.....					6%	5%	9%	8%	11%	14%	20%
% of occupancy.....	67%	66%	64%	64%	63%	60%	64%	67%	70%	69%	69%
Admissions.....											
% increase of admissions since 1934.....					-0.3%	-0.5%	+9%	+23%	+32%	+35%	+43%
Ratio admission to population.....				1 in 20			1 in 18	1 in 17	1 in 15	1 in 15	1 in 15
Average stay.....											12.4 days
RICHMOND HOSPITAL SERVICE ASSOCIATION											
Census.....								1,172	4,612	14,077	25,965
Admissions.....								57	385	1,484	3,119
Days of care.....								587	3,069	12,543	25,713
Average stay.....								10.2	8.2	8.4	8.2 days
Ratio admission to enrolled population.....								1 in 11	1 in 12	1 in 10	1 in 10

the population by states and the percentage of occupancy of general hospitals by states. An interesting observation is made in this issue that the hospital beds in the United States doubled in 1918 the number available in 1909 and in 1939 was three times the number available in 1909.

Furthering my contention that the high incidence of occupancy of the Richmond hospital beds is due to lack of building rather than the fact that a Hospital Service Plan was removing the catastrophic penalty of expense for a large number of the population, I have projected for the State of Virginia and for the United States as a whole, the same small increase in beds as has occurred in Richmond. In 1920 you will note Richmond had 1,046 beds. Since then Hygeia closed as also the Richmond Eye, Ear and Nose Infirmary and the Virginia Hospital. In 1928, therefore, there were only 1,011 beds and in 1930 only 1,000. Since 1930 there has been an in-

crease of general hospital beds of 73 or 7 per cent increase. Had Virginia as a whole, built no more beds during this decade than had Richmond, the occupancy of those beds in Virginia would have been 81 per cent instead of 65 per cent; in United States the same increase would have shown a 77 per cent occupancy instead of 69 per cent. The building of hospital facilities in Virginia has caused since 1934 an increase of admissions to Richmond hospitals of only 36 per cent whereas this increase for Virginia in the same period was 59 per cent and for the United States as a whole, 43 per cent. The census of the Richmond Hospital Service Association is shown for the four years. In 1939 the average stay of subscribers to this Plan was only 8.2 days whereas for Richmond as a whole, average stay was eleven days, for Virginia 9.16 and for the United States 12.4. The ratio of admissions to the population of the Hospital Service Plan was one in ten for Rich-

mond, one in seven for Virginia and for the United States one in fifteen. The low ratio of admissions in Richmond was due to two factors: one, the large negro population which, as you know, does not use the hospital with the same frequency as the white population and, second, to the fact that Richmond still serves a large area outside of the City. This service outside of Richmond has no doubt been curtailed by the building of better hospital facilities in the State of Virginia, West Virginia and particularly in North Carolina. The Richmond Hospital census will show a fairly high percentage of patients outside the metropolitan area of Richmond. This Plan has few negro subscribers.

To project to 1945 what will occur in Richmond is anybody's guess and the results will be based on many factors. We know that people will continue to use hospitals more and more, first because they are sold on the idea that the hospital is the place to be sick; secondly, of the difference in housing facilities with a large number of people living in apartments and third, at the insistence of the medical profession, that they can more adequately and conveniently treat ill patients housed under one roof than if they had to peregrinate from house to house. Therefore, what is going to occur in Richmond and in Virginia will entirely depend upon the realization of the Boards of control of present hospital facilities in providing additional beds and indeed a new hospital of at least two hundred beds for Richmond within the next few years.

On another tabulation I have attempted to show the percentage of hospital service plan subscribers who are hospitalized for minor conditions. I think this bears out my statement to you that a small percentage of our subscribers are being hospitalized for conditions for which they would not receive hospitalization even without a hospital contract. Our records will show rather conclusively that if physicians hospitalized subscribers to this Plan on the same basis they do their other private patients and for the relatively same lengths of stay, we could better prove that this hospital service plan is not making people ill but rather is improving their health and that instead of filling hospitals we are making more hospital beds available to the unenrolled population. We are definitely removing patients from free and part-pay beds into full pay accommodations.

M. HASKINS COLEMAN, JR. *Executive Director,
Richmond Hospital Service Association.*

Medical Services to Jail Prisoners.

TO THE EDITOR:

The writer of this is one of the fairly considerable number of Virginia physicians who render medical service to prisoners in county or city jails. The remuneration for this service is wholly inadequate. The State Legislature lays down the law as to the rate of compensation, and says in substance: Take it or leave it. The rate set forth in the Code of Virginia is seventy-five cents *per day* for one patient, and fifty cents per day for any additional patient—not per visit, but *per day*. If it is necessary to see a patient two or three times a day, the practitioner is entitled to only the *per diem* under the law.

In addition to the small pay, another hardship, newly imposed, may be mentioned; that is, in making out his account, the medical man must first ascertain whether the sick man or woman is charged with a felony, or a misdemeanor, or a violation of the A.B.C. laws, and carry out the total to the appropriate column on the blank—a tedious and time-consuming matter which by rights should be done, if at all necessary, by a clerk in the auditor's office, who is paid to do such work. In fact, the making out of accounts, under the regulations laid down by those in charge of these things, is really more onerous than attending the sick.

Furthermore, no additional pay is allowed for any surgical work, as judge and comptroller insist they have no latitude under the law to certify accounts for payment other than on the seventy-five cent and fifty cent basis. Prisoners are often brought to jail with numerous cuts, requiring suturing and dressings, or they develop conditions while imprisoned necessitating minor surgery, such as incising boils and abscesses, or other like things. Such as this are time-consuming, and certainly surgical work, even minor surgical procedures, has always commanded rather larger fees than do routine medical visits.

This matter is one in which an injustice has been done by the State of Virginia for many years to a group of medical men, who although knowing they were being unjustly treated yet have apparently thought it too small a matter about which to make complaint. Of course, in any given case the doctor concerned could decline to render service, but his successor would then have the same injustice done him; and it is the principle of the thing which should command attention. It is becoming more and more the habit apparently for people, as individuals

as well as in the aggregate, to demand or expect free or partly free service from medical men. This is one instance in which it is time to take steps to relieve a situation. Obviously the only recourse is to have the law amended, a function only of the State Legislature.

In the event that the law-making body is called in special session, as to which there seems to be a possibility, it might be feasible to bring this into consideration at that time.

Bring this to the attention of your representatives in the State Legislature, both in Senate and in House. Let others interested speak up.

E. P. TOMPKINS, M.D.

Lexington, Va.

November 26, 1940.

Mental Hygiene Activities

The Mental Hygiene Society of Virginia has selected the Problems of the Adolescent as its main topic of study this year, since it is especially fitting that the personality problems of those most likely to compose our first line of defense should receive prime consideration. The main feature of the annual meeting held in Richmond during October was a symposium on this subject. It is planned to continue the discussions during the winter at meetings in other cities in the State.

At Norfolk, Virginia, in February there will be a discussion of Juvenile Delinquency, while in Danville in March a half day of study is being organized when the Value of Recreation will be stressed. At night a program will be given before the local Medical Society. The Mental Hygiene Society is especially anxious to arrange other meetings with medical societies throughout the State. Any local society that is interested in the possibility of arranging such a joint program should get in touch with Mrs. Donna B. Bemiss, Secretary, The Mental Hygiene Society of Virginia, 1001 E. Clay Street, Richmond, Virginia.

The high point of Mental Hygiene activities, however, will be reached next May. At the time of the annual convention of the American Psychiatric Association in Richmond there will be an evening program sponsored by the Mental Hygiene Society of Virginia. The meeting will be open to the public and the speakers the highest authorities on Mental

Hygiene Problems. The Medical Profession of Virginia especially is urged to attend.

Disorders of the Personality, otherwise known as mental diseases, are fundamentally no different from any other type of disease except that the total personality reaction plays a greater role and is more manifest. The sick personality can be seen, can be felt, and is irritating in many ways. It has very much the same effect as did a body infected with smallpox or leprosy. Persons with these diseases were shut off in pesthouses to protect the public, in part it is true but, to a great extent, to enable society to escape the unsightly. If the lungs were on the outside of the body pneumonia and tuberculosis would cause something of the same social response. This is the reason that society is so anxious to hide the mentally sick in jails, penitentiaries and other special institutions for their care, where their irritating condition can be more or less forgotten.

It is hard to persuade the Medical Profession that mental disease will respond to skilled care as favorably as many and much more readily than some so-called medical diseases. The population of our State Mental Hospitals last year was approximately 10,900. The discharged patients were 237 per month, or 2,844 per year, while the admission rate was 279 per month for the first four months of this year. Forty-two more came in per month than went out. At Southwestern State, however, where the staff is somewhere near adequate, there were 148 admissions and 166 discharges; in other words, a decrease of eighteen in hospital population. The need in Virginia is not for bigger mental hospitals, but, first a more interested medical profession, better trained in the treatment of personality disorders and, secondly, a greater number of well trained physicians in our State Hospitals. The Mental Hygiene Society of Virginia is anxious to stir the medical profession of the State, to stimulate them to visualize the mental health problem, and, finally, to bring to them whatever they may need in the way of information or any other sort of aid.

Public Health Statistics

I. C. RIGGIN, M. D.,

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for November, 1940, compared with the same month in 1939,

and for the period of January through November, 1940, compared with the same period in 1939, follows:

	Nov.		JAN.-	
	1940	1939	Nov. 1940	Nov. 1939
Typhoid and Paratyphoid Fever	36	23	259	447
Diarrhea and Dysentery	93	84	1,809	4,139
Measles	166	29	3,624	10,784
Scarlet Fever	296	227	1,586	1,338
Diphtheria	131	290	626	1,293
Poliomyelitis	48	4	231	43
Meningitis	7	4	71	57
Undulant Fever	2	0	22	21
Rocky Mountain Spotted Fever	1	0	43	48
Tularemia	0	8	39	64

THE GENERAL PRACTITIONER'S PART IN INDUSTRIAL HYGIENE

Much attention in industrial hygiene has been directed toward organization of industrial medicine within the large corporations. Those industrial corporations employing 10,000 or more workers have set up medical departments adequately staffed with trained personnel. These staffs have sponsored numerous developments in industrial hygiene such as research into the problems of inorganic dust, carbon monoxide, lead compounds, and other toxic hazards, group insurance, compensation departments, and safety education. This trend is natural and praiseworthy, but to some extent it has given the impression that the bulk of industrial hazards are confined to so-called "big industry". Of course this is erroneous.

The prevention and control of occupational hazards present the same problems for the small plant as they do for the large one. For example, the exposure to a toxic gas around one coke oven is just as real as that emanating from a large bi-product plant. If occupational hazards do not assume the importance in the small plants as they do in the larger ones, it is because the small plant lacks someone trained to recognize them and institute measures for their prevention and control.

A fact that few recognize is that 99.5 per cent of all industries employ less than 1,000 workers each and that 98.6 per cent have less than 500 workers. In other words, out of 8,838,743 industrial workers (according to federal figures) 6,678,754 are employed in plants and establishments working 1,000 men or less.

In the plant of the large corporation the industrial physician has available laboratory facilities capable of field surveys relating to potential hazards, indus-

trial engineering, consultation and advice, as well as qualified chemists and toxicologists for maintaining the proper control of industrial hazards.

It has been indicated that the majority of workers are not employed by large corporations, and that most small plants, due to various factors connected with their operation, cannot afford to employ a full-time industrial physician, to say nothing of nurses, technical facilities, etc. How then can medical service, such as has been outlined, be made available to this large group of small plant employees?

In the majority of small plants there are few so-called classical hazards. Those most commonly present are extreme heat, both dry and moist, dampness, ventilation and lighting problems, and repeated motion. These hazards are not on the compensation schedule, but consideration of their importance as factors in absenteeism is basically an industrial hygiene problem.

To illustrate the manner of attacking common hazards, let us take the men working in a drying room. Obviously they must be given salt tablets. Again, platforms for workers to stand on in refrigerated rooms, and ventilation at certain periods during the day for offices not properly ventilated also are necessary. Individuals performing work requiring repeated motion must be watched carefully so as not to develop muscle strain, tenosynovitis, and the like. In other words, the point to remember is that industrial hygiene considerations are quite prevalent, despite the total absence of readily apparent hazards.

Toxic hazards of course are encountered in small industries and should not be overlooked; in fact the part-time industrial physician should know of the existence of every toxic hazard within his plant. If he is not familiar with the various new compounds and volatile solvents that so rapidly are being put into use, he can obtain upon request the consultation services of the Bureau of Industrial Hygiene, State Department of Health. Sanitary plant surveys also represent a part of the service rendered by the State Health Department in cooperation with the plant physician. Even with this service available, however, the industrial physician should go through the entire plant periodically and inspect thoroughly each operation.

From the standpoint of industrial employee health the main problem is providing medical supervision in small plants. Only when this is accomplished can industrial hygiene problems be recognized in these

industries and proper protection afforded. The general practitioner who is engaged in a part-time industrial practice can render a great service and produce results hitherto not accomplished.

Organized medicine recognizes the problems presented by small plant industry; and the time is quite near when more general practitioners who are doing part-time plant work will intensify their efforts.

Miscellaneous

Psychoanalysis of Great Britain

There is an id of human greatness,
Tintured by the touch divine
In every man of British breeding,
Transfused in the Empire's line.

There is an ego, quite objective,
In their hopes and fears and pride,
Shown by their sports and way of living,
Making sure they shall abide.

And with their genes and protoplasm,
Wrongs forgiven, faults forgot,
No one can diagnose the British
As a cacogenic lot.

They have emotion-reason balance;
Win they shall whate'er the odds
For they are nature's non-defeatists—
By the cards and with the gods.

—BEVERLEY RANDOLPH TUCKER.

EXPLANATORY NOTES.—The id is the essence of the unconscious personality.

Cacogenic means having a tendency toward race degeneracy.

Genes is an hereditary germinal factor or unit in the chromosome which carries an hereditarily transmissible character.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

President's Letter

MY DEAR AUXILIARY MEMBERS:

May the coming year be one of happiness and success for all Auxiliary Members!

With the start of the New Year I hope we may all enter upon the work of each department with renewed zeal and energy which will mean a year of successful accomplishment.

The Program and Health, Public Relations and Legislative Chairman have spent much time and thought on the splendid programs they have given us.

The Press and Publicity Chairman needs your full aid and cooperation. Please send to Mrs. Snead each month accounts of meetings and items of work and recreation being done by each Auxiliary. We are all anxious to know just what every other group is doing as these items increase interest and enthusiasm and are often an inspiration to others.

Your Exhibit Chairman has splendid ideas for her work and wishes suggestions from the different Auxiliaries to help make the exhibits at the National and State meetings outstanding.

We are so anxious for a full quota of subscriptions to the *Bulletin*—if you have not already subscribed, won't you do so as soon as possible? Mrs. Holcombe asks urgently that one-fourth of our membership subscribe and I do hope that we may have this number.

The Leigh-Hodges-Wright Memorial is work that must always be foremost in our minds. The bed maintained at Blue Ridge has been constantly occupied for some time past and is of inestimable benefit.

The Cancer Control Chairman has an excellent program which will be most instructive and helpful to each Group.

Let us not forget the Jane Todd Crawford Memorial. At a meeting of the Southern Medical Auxiliary in Louisville, it was decided that this Memorial be educational in form. A committee was appointed and they will report at the next general meeting, when the final decision will be made. I know that the members of the Virginia Auxiliary are deeply interested in this Memorial and want to have a full share in carrying forward this splendid work.

Our Organization Chairman is working in every way possible to organize new Auxiliaries and we do hope for several new ones before the year is over. One of our Councilors says that he considers a membership drive a very essential part of the work and to the Presidents of all local Auxiliaries I would like to say—if there are any eligible women in your community won't you and your Membership Chair-

man make a special effort to enroll them? The State Chairman will greatly appreciate any names sent her. I am counting on a constantly growing "Honor Roll" one of which we may all be justly proud.

If I can be of assistance to any one at any time, please do not fail to call on me for it will be a pleasure.

With best wishes to each and every member of the Auxiliary,

GRACE WILKINS HOLLAND,
(MRS. GRIFFIN W. HOLLAND).

Suggested Basic Programs

The following subjects are respectfully submitted to the Medical Auxiliaries for their consideration as basic programs during the coming year:

1. Problems of National Defense and the contributions that the Auxiliary can make in this work (see special department of Medical Military Preparedness in *The Journal of the American Medical Association*).

2. The platform and the policies of the American Medical Association.

3. A study of Surgeon General Parran's plan "Crusade against Syphilis".

4. Public Relations.

Each Auxiliary is asked to send a current issue of *Hygeia* to the President of the P.T.A.; Federated Woman's Club; District President of Woman's Club; Federation Public Relation Chairman; and see that every school in their district is a subscriber to *Hygeia*.

Each Auxiliary and, if possible, every member of the Auxiliary is asked to subscribe to the official publication, the "Bulletin".

All Auxiliaries should strive to further their ideals and accomplishments by careful planning for increased, active membership and future exhibits.

MRS. L. KOLIPINSKI,
Chairman, Program and Health.

Auxiliary Groups.

MID-TIDEWATER

A meeting of this Auxiliary was held in the home of Mrs. E. L. W. Ferry, Millers Tavern, on October 26. We had a full attendance and report three new members—Mrs. Arthur VanName, Center Cross; Mrs. Clarence Campbell, Sparta; and Mrs. William Hoskins, Stevensville.

We had as our guest speaker our President-Elect, Mrs. E. Latane Flanagan, who gave a most inter-

esting report of the state meeting at White Sulphur Springs. She also told of "her hopes and aims for 1941-1942".

Another added pleasure was the delightful lunch which followed with our Mid-Tidewater doctors as hosts, and a group of Richmond doctors as guests.

The officers of this Auxiliary are: President, Mrs. Hawes Campbell, Venter; vice-president, Mrs. A. W. Lewis, Aylett; secretary-treasurer, Mrs. M. H. Harris, West Point; with the following committee chairmen—Jane Todd Crawford Memorial, Mrs. A. L. VanName, Center Cross; Public Relations, Mrs. J. W. Smith, Hayes Store; and Press and Publicity, Mrs. Paul C. Pearson, Aylett.

ELLIE COCKE CAMPBELL,
(MRS. HAWES CAMPBELL).

RICHMOND

At a meeting of the Auxiliary to the Richmond Academy of Medicine in December, the following officers were elected: President, Mrs. Edward H. Williams; vice-president, Mrs. J. Fred Wampler; recording secretary, Mrs. Rex Blankinship; corresponding secretary, Mrs. Harry B. Hinchman; treasurer, Mrs. Douglas Chapman; and parliamentarian, Mrs. Gordon Boisseau.

ACCOMAC-NORTHAMPTON

The officers of this Auxiliary for 1941 are: President, Mrs. J. L. DeCormis, Accomac; vice-president, Mrs. E. H. Trower, Eastville; secretary, Mrs. J. H. Hiden, Pungoteague; and treasurer, Mrs. S. S. Kellam, Cape Charles.

PETERSBURG

This Auxiliary signed its pledge to raise \$900.00 to furnish the nursery of the proposed new Petersburg Hospital, and plans for raising the money were discussed at the regular November meeting. A contribution was also made for the Leigh-Hodges-Wright Memorial Bed.

A rummage sale was held on December 6 and 7, with Mrs. H. M. Snead, chairman. Proceeds from this amounted to \$85.00.

Arrangements have been made for the annual linen shower in February, with Mrs. Meade Edmunds, chairman.

Officers for 1941 are: President, Mrs. E. L. McGill; president-elect, Mrs. Munford Yates; vice-president, Mrs. Fletcher Wright, Jr.; treasurer, Mrs. Herbert Jones; corresponding secretary, Mrs. W. B.

McIlwaine; and recording secretary, Mrs. Louis' Kolipinski.

NORFOLK

The Auxiliary has had two regular meetings, with an opening drive for *Hygeia*, nine subscriptions having been secured. We have subscribed to the *Bulletin* for our own use and had a report covering highlights of the first issue. We renewed our obligation to continue the support of a patient at the Tidewater Tubercular Hospital. The Layette Chairman, with her committee, has reported four layettes will be completed this month.

The new officers for the coming year are as follows: President, Mrs. A. G. Horton; president-elect, Mrs. Walter P. Adams, Jr.; vice-presidents, Mrs. K. W. Howard, Mrs. J. W. Anderson, and Mrs. W. E. Butler; recording secretary, Mrs. R. M. Reynolds, and assistant, Mrs. W. L. Taliaferro; corresponding secretary, Mrs. Southgate Leigh, and assistant, Mrs. R. Bryan Grinnan; treasurer, Mrs. Thomas Spessard, and assistant, Mrs. G. W. Simpson; parliamentarian, Mrs. C. C. Smith; and historian, Mrs. W. R. Tyson.

MRS. A. G. HORTON,
President.

Book Announcements

Clinical Diabetes Mellitus and Hyperinsulinism. By RUSSELL M. WILDER, M.D., Ph.D., F.A.C.P., Professor and Chief of the Department of Medicine, The Mayo Foundation for Medical Education and Research, University of Minnesota; Head of the Section on Metabolism Therapy, Division of Medicine, The Mayo Clinic, Philadelphia. W. B. Saunders Company. 1940. xvii-459 pages. Illustrated. Cloth. Price, \$6.00.

This new book on diabetes and hyperinsulinism is a welcome addition to the library. Individual phases of the disease are covered rather completely and very clearly in each chapter of the book, so that it affords us easy reference to specific topics. The information given includes not only that from the author's experience, but also from that of other men. The omission of many controversial observations and opinions is a real asset. Directions of treatment are given clearly and usually in sufficient detail to en-

able anyone to obtain satisfactory results. The section on hyperinsulinism gives us a complete and yet condensed report of the work which has been done in this field.

WILLIAM R. JORDAN, M.D.

Vitamin Therapy in General Practice. By EDGAR S. GORDON, M.A., M.D., Associate in Medicine and Instructor in Physiological Chemistry, University of Wisconsin. And ELMER L. SEVRINGHAUS, M.D., F.A.C.P., Professor of Medicine, University of Wisconsin; Editor, Department of Endocrinology, The Year Book of Neurology, Psychiatry and Endocrinology. The Year Book Publishers, Inc. Chicago, 1940. 258 pages. Cloth. Price, \$2.75.

Our knowledge of the vitamins and of vitamin therapy is changing so rapidly that only new books and short books on the subjects are worth reading. Such a book is the one before us. Its format is inviting, its print large, its illustrations well chosen, its style simple and direct. It makes a serviceable companion to Sevringhaus's *Endocrine Therapy*.

W. B. B.

Obstetrics in General Practice. By J. P. GREENHILL, B.S., M.D., F.A.C.S., Professor of Obstetrics, and Gynecology, Loyola University Medical School, Chicago; Professor of Gynecology, Cook County Graduate School of Medicine; etc. The Year Book Publishers, Inc. Chicago. 1940. 448 pages. Illustrated. Cloth. Price, \$3.50.

This excellent manual of obstetrics fills a great need. As the author states, it is not intended as competition for the standard voluminous textbooks on obstetrics. Historical data, controversial discussions, extensive descriptions of anatomy and pathology, and the less frequent complications of pregnancy and parturition have been omitted.

There are only 448 pages with 222 illustrations. It can be read in a reasonable length of time, and serves as a relatively quick and complete review of the entire field of practical obstetrics. It discusses briefly yet, completely, the present accepted methods of managing the most frequently encountered obstetrical problems. The whole subject is brought up to date, several references being to articles appearing in the current literature as recent as May, 1940.

This book is a valuable contribution, and should be a great help to all who care for obstetrical patients, particularly to the general practitioner.

W. C. WINN, M.D.

VIRGINIA MEDICAL MONTHLY

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WYNDHAM B. BLANTON, M. D.

Editor

AGNES V. EDWARDS

Business Manager

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, \$2.00. Single Copies, 25c.

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No. 1.

Editorial

In the Interest of a Sane Public Attitude.

There is neither need nor justification at this time for creating any alarm in regard to an impending epidemic of influenza or any other communicable disease in Virginia. That there will, however, be an increased prevalence of influenza during the now beginning winter season seems quite likely, particularly in view of the recent presence of this disease in epidemic proportions in the extreme western part of the United States. The disease in California has been relatively mild in character and not attended by serious complications in the great majority of cases and has therefore not imposed any significant increase in mortality risk. Laboratory tests have indicated that type A influenza virus was responsible for the outbreak. Rural areas, from preliminary reports, seem to have suffered the highest attack rate and it has been estimated that between 25 to 30 per cent of the population in some of the communities has been affected.

Recognizing the incompleteness of our knowledge concerning the behavior of this disease and more particularly our inability to evaluate the conditions and circumstances which predispose to its occurrence in severe epidemic or pandemic form, it would seem wise to give due consideration to the possible problem which influenza may present at some time either

in the near or distant future. Especially does this seem a sane precaution in light of the importance of present activities concerned with our national defense. The occurrence of an epidemic similar to that of 1918-19 would be a disaster of most serious consequence. This would certainly be so if no better provision for emergency organization existed than in those years. Plans are therefore being formulated which it is hoped will facilitate the most efficient emergency epidemic organization in the individual communities of Virginia should the need for such organization ever arise.

The responsibility for the correlation of the activities and resources of the various official and lay agencies necessary for this organization will be placed upon the local health departments in those jurisdictions in which there are health departments operating. In those areas where there is no full-time health service the Medical Society of Virginia will assume responsibility for the organization, correlation and direction of the activities.

The most careful observation for indications of the increasing prevalence of influenza and other communicable diseases will be continued by Federal, State and local health departments and the recognition of such signs will be promptly publicized. The appearance of definite criteria, how-

ever, may not allow sufficient time for the organization of the needed forces before the occurrence of the emergency itself. It is proposed therefore to prepare in so far as possible for any emergency even though the application of this preparation may never become necessary.

I. C. R.

No Influenza Vaccine Yet.

In answer to a recent inquiry from the VIRGINIA MEDICAL MONTHLY as to whether or not the virus vaccine against influenza referred to from time to time in the daily papers was ready for distribution, the following telegram from the Rockefeller Foundation was received: "Your telegram December 16 received. Influenza vaccine still in experimental stage. Efficacy being studied but final results not yet available." If an epidemic of influenza spreads to Virginia this winter we shall have to rely on other measures than prophylactic vaccination.

Tuberculosis and the Induction Boards.

A number of years ago Armstrong conducted studies at Framingham (Massachusetts) which showed that in a city of 100,000 the expected number of active cases of tuberculosis would be 1,000. It is now generally agreed as a result of numerous other surveys that the incidence of active pulmonary tuberculosis is approximately 1 per cent of the population, and that the disease is quiescent in perhaps another 1 per cent.

In a recent survey of the results of routine chest X-ray examinations of recruits which appeared in the *Canadian Medical Association Journal* (September, 1940), W. A. Jones showed that in rough figures one out of every 100 recruits was rejected for past or present pulmonary tuberculosis. About 0.5 per cent were rejected for other causes. Jones estimated that, in pensions and in treatment for pulmonary tuberculosis, the last war has cost the Canadian government \$150,000,000. He believes that the X-ray survey of the first 100,000 Canadian recruits for the present war, made at a cost of \$200,000, represents a potential saving of \$25,000,000.

The United States government now maintains twelve hospitals for the care of tubercular war veterans with a combined capacity of 5,068 beds. During the past year almost 12,000 veterans were cared for in these hospitals. There are in the United States today 62,614 veterans with pulmonary tuberculosis. Of these 53,343 are classified as having a service

contracted disability, and 17,891 are regarded as having active lesions. It costs about \$3.00 a day to maintain a patient in a hospital. Hospital construction, the salaries of personnel, insurance and vocational training are added expenses. The annual compensation allowed each service contracted case of tuberculosis is \$635.00. For the non-service contracted case it is half that amount. Tuberculosis in the soldiers of our last war has cost the people of the United States over a billion dollars.

From these figures it would appear that pulmonary tuberculosis is the most important disease, actually and potentially, that faces draft boards and induction boards in their examination of "draftees." The Surgeon General and the Medical Department of the Army are determined to profit by the experience of the last war and to see that no such bill as we are now footing will have to be paid by the next generation for tuberculosis among soldiers of our new Army. It is for this reason that routine X-ray examination of the chest is a part of the procedure prescribed for induction boards.

In connection with X-ray examinations of the chest for pulmonary tuberculosis Landis has asked and answered three important questions: (1) "Will the X-ray give us information in cases presenting suspicious symptoms but in which the physical signs are absent or indefinite?" Answer: "The X-rays are not infallible. They will at times fail to show any evidence whatever on the plate although the history, the physical signs and subsequent course of the case prove it to be undoubtedly one of pulmonary tuberculosis." (2) "Will the X-rays give us an etiological diagnosis?" Answer: In early and doubtful cases, no. Baetjer and Pancoast have emphasized this. (3) "Will the X-rays indicate whether the lesion is active or inactive?" Answer: "It can be stated without much question that one cannot determine from the examination of a radiograph alone whether the disease is active or inactive."

Cocke agrees in general with the above opinion but thinks that with serial films such a diagnosis may sometimes be made. Miller thinks previous X-ray films for comparison are desirable, but regards cavitation or fluffy lesions as indicative of "at least potential activity". Webb believes that an exudative lesion which the X-ray discloses is active. At Ray Brook it is claimed that animal experiments have shown that the X-ray cannot be relied upon to show activity. At Trudeau the opposite opinion is held,

but even there only a 75 per cent accuracy is claimed. Price believes that the X-ray diagnosis of activity is a trick that it is possible to teach only to very expert readers.

The detection of early tuberculosis by the stethoscope is a difficult and often uncertain procedure. In the last war (1917) persistent moist râles at the pulmonary apices were regarded as the only trustworthy sign of activity. It is now thought that only one in eight cases can be detected by this method.

Armed with all available knowledge, induction boards must be keen in their search for pulmonary tuberculosis. They will be tremendously helped by good X-ray films of the chest capably interpreted, but they will not forget the patient himself, his symptoms and signs. Physical examination, although unable to detect many lesions visible by X-ray, must still be relied upon as a most valuable method of discovering pulmonary disease, especially active tuberculosis.

The Doctors' Dilemma.

There are today 1,073 hospital beds in Richmond. The average stay of patients in these beds over a period of five years has been eleven days. Each bed has therefore accommodated an average of 33.1 patients annually. From these figures it is easy mathematics to determine that 35,510 is the absolute saturation point for Richmond hospitals.

Patients are not books on a shelf and they cannot be admitted and discharged from hospitals without some lag. For this reason 100 per cent of occupancy is not possible or desirable. The ideal lies somewhere between 70 and 80 per cent of saturation. Using the latter figure and applying it to the situation in Richmond, a total of 28,408 is obtained. It represents a practical ceiling under which most hospitals can be expected to operate efficiently. Keeping in mind the absolute saturation point of 35,510 and the practical ceiling of 28,408, we are prepared to consider the progressive increase in hospital admissions in Richmond as they have been tabulated for the last few years. In 1934 there were 21,777 admissions; in 1935, 22,658; in 1936, 25,220; in 1937, 27,260; in 1938, 27,628; in 1939, 29,507, and in 1940 it is estimated that there will be 30,249. The present number of annual admissions is therefore already above the practical ceiling and the present trend points to 1943 as the time when absolute saturation will be reached.

This is an alarming situation. Practicing physicians in the Richmond area are already experiencing difficulties. Patients willing and able to pay are being denied admission to hospitals because the hospitals are too crowded to receive them. The congestion promises to get worse.

In the State of Virginia as a whole there has been a 33 per cent increase in hospital bed capacity in the last ten years. This in part accounts for the fact that Richmond is receiving relatively fewer patients from out of the city than in former times. In the last ten years Richmond's population has increased by about 10 per cent, too small a figure to explain the 36 per cent increase in hospital admissions that has taken place here since 1934. It seems to us that the Richmond Hospital Service Association has been a large factor in bringing this condition to pass by making hospitalization easier and cheaper for the 41,408 members who now constitute its membership. This statement is not made in criticism of the Association, for we are convinced that more persons in Richmond should be hospitalized than are now being admitted to hospitals.

The truth is apparent. There are too few hospital beds in Richmond at this time and the acuteness of the situation is likely to be increased by the growth of the population and by the extension of group hospitalization. The new hospital of the Medical College of Virginia will prove only a partial corrective since it is understood that in the closing of the Memorial Hospital and the opening of the new hospital an addition of only 100 beds is to be now realized. It is significant that although the number of hospital beds available in the United States has trebled in the last thirty years, in Richmond we have now only twenty-seven more beds than we had in 1920.

Cancer Control in Virginia.

Every worth while movement must be able to survive a barrage of criticism. The Cancer Control Foundation is no exception.

There are those who are fed up on foundations and associations organized for promotion. There are those who view them as high pressure artificial creations designed to bolster issues unable to stand on their own feet. One hears criticism from those who dislike publicity about medicine when they themselves are omitted from it, and one hears it also from others who honestly believe that more harm than good follows it. In the case of the movement

under consideration, for example, there are some who sincerely deplore the cancer phobia that has all too apparently resulted from it. There are those who think they sense the personal profit motive in the agitation for it by physicians, and those who dislike what they characterize as the morbid desire on the part of the lay participant to be permitted backstage in medicine. Some have made fun of it, going so far as to ask why not have associations for the control of stuffy noses, or a committee to cure piles, or a foundation devoted to the relief of indigestion. Many cannot understand why the victims of cancer, heart disease and poliomyelitis should steal the show while the sufferers from other diseases are ignored.

Fortunately none of the criticism of too great or unwise zeal applies to the Virginia organization for the control of cancer which has preferred to go along slowly with its program. It is headed up and guided by men above suspicion and is now striking out in the right direction. Director Edwin P. Lehman presents the case of the Virginia Cancer Foundation in this issue of the MONTHLY. His questionnaire which is also being distributed at this time should be taken seriously by those to whom it is addressed and their opinions should be freely expressed. Too little is known about cancer for physicians to assume a cocksure attitude about it. We have an informed, earnest but modest director who, before beginning a campaign of education, is willing to be educated himself.

Proceedings of Societies

The Fairfax County Medical Society

Met on November 27 at the Penn-Daw Hotel in Alexandria for a luncheon meeting. There were twenty-two members present. Dr. Carson Lee Fifer, Alexandria, spoke on the office treatment of gynecological conditions. A lively discussion followed. A committee was appointed to handle the medical preparedness questionnaires. Flowers were sent to two members who were sick—Dr. W. P. Caton of Accotink, and Dr. F. M. Brooks of Fairfax Station, a charter member. The next meeting of this Society will be held in January.

ALICE HEYL KIESSLING, *Secretary*.

The Fourth District and Southside Virginia Medical Society

Met in Petersburg on December 27, with Dr. W. M. Phipps, president, presiding. The following scientific program was presented: Sulfathiazole and Allied Types of Chemotherapy in Children by Dr. W. B. McIlwaine, Petersburg; The Cause and Prevention of Chronic Bronchiectasis by Dr. Porter Vinson; What Every Physician Should Know about the Spread and Prevention of Tuberculosis by Dr. Ramsay Spillman, New York; New and Interesting Phases of Rheumatic Fever by Dr. T. Duckett Jones, Boston, Mass.; Abdominal Pregnancy with Report of Two Cases by Dr. J. B. Jones, Petersburg; The

Heart in Pregnancy by Dr. William B. Porter, Richmond; Signs and Symptoms of Brain Tumors that Should be Familiar to Every Physician by Dr. C. C. Coleman, Richmond; and Signs and Symptoms of Certain Important Surgical Emergencies by Dr. I. A. Bigger, Richmond.

Following the program, Dr. and Mrs. Wright Clarkson entertained the physicians and their wives at a buffet supper.

Dr. C. E. Martin, Emporia, is secretary of this Society.

Fredericksburg Medical Society.

New officers for this Society for 1941, elected at its last meeting, are: President, Dr. L. F. Lee, Passapatanzy; vice-president, Dr. T. B. Payne, Fredericksburg; and secretary-treasurer, Dr. L. A. Busch, also of Fredericksburg.

WILLIAM W. BUTZNER, JR.,
Retiring Secretary.

The Hanover County Medical Society

Held its regular quarterly meeting on Tuesday, December 3, at which time the following officers were elected for the ensuing year: Dr. A. C. Ray, Jr., Ashland, President; Dr. J. A. Wright, Jr., Doswell, Vice-President; and Dr. Chas. L. Savage, Ashland, Secretary-Treasurer. After a short business meeting Dr. Kinloch Nelson of Richmond spoke to

the Society on the treatment of syphilis.

This Society meets quarterly on the first Tuesdays in March, June, September, and December.

CHARLES L. SAVAGE,
Secretary.

Lynchburg Academy of Medicine.

Dr. Powell G. Dillard became president of the Academy for 1941, succeeding Dr. Ernest G. Scott. Other officers are Dr. John Hundley, president-elect; Dr. Carleton Moorman, vice-president; and Drs. J. R. Gorman, F. O. Plunkett, H. C. Brownley, and E. S. Groseclose, directors. The secretary will be appointed at the January meeting.

The Medical Society of Northern Virginia,

At its annual meeting on December 10, elected Dr. John B. McKee, Winchester, as president; Dr. D. M. Kipps, Front Royal, vice-president; and Dr. J. E. Harris, Winchester, secretary-treasurer (re-elected).

At the scientific session, papers were read by Dr. C. E. Foley, Front Royal, and Dr. C. L. Riley, Winchester. A motion picture on the diagnosis and treatment of pneumonia was also shown.

Petersburg Medical Faculty.

New officers elected to serve the Faculty for 1941 are: President, Dr. L. S. Early; vice-presidents, Drs. J. Bolling Jones and Philip Jacobson; and secretary-treasurer, Dr. Wilbur Bowman.

Richmond Academy of Medicine.

At the annual meeting of the Academy, held on December 10, Dr. William Branch Porter succeeded

to the presidency and the following officers were elected: President-elect, Dr. Beverley R. Tucker; vice-presidents, Drs. T. Dewey Davis and O. B. Darden, and as new members of the Board of Trustees, Dr. John L. Tabb and Dr. C. L. Outland. The usual Christmas entertainment followed the meeting.

Roanoke Academy of Medicine.

At the meeting of the Academy held on November 4, the following scientific program was given: Syphilis of the Stomach by Dr. Paul Davis; The Relationship between Hodgkin's Disease and Chronic Brucellosis by Dr. June U. Gunter; and Life Insurance Medicine by Dr. D. S. Garner. Dr. William Grossmann of the State Health Department discussed Poliomyelitis at the Present Time.

The program at the regular meeting on December 2 was as follows: Case Reports—Carcinoma of the Colon, Five Year Cure; and Renal Adenocarcinoma Complicating Huge Uterine Myoma by Dr. Linwood Keyser; Verumontanitis by Dr. Frank Helvestine, Jr.; Intestinal Implantation with Lactobacillus Acidophilus by the Use of Bacillus Acidophilus Milk by Dr. J. D. Willis; and Resume of Symposium on Obstetrics and Gynecology held at the University of Virginia, November 8 and 9 by Drs. A. M. Groseclose and Rees Morgan.

The usual social hour followed both meetings.

Dr. Kenneth D. Graves is president of the Academy and Dr. Allen Barker, secretary-treasurer.

News Notes

The Roanoke Academy of Medicine

Plans a special meeting on Monday, February 3, and an invitation is extended to members of the State Society, especially those in Southwestern Virginia, to attend.

A subscription banquet will be held at the Hotel Roanoke at 6:30. The first address will be by Dr. Herbert F. Traut, formerly resident in gynecology at Johns Hopkins Hospital and now associate professor of obstetrics and gynecology at Cornell University. His subject will be "Upper Urinary Tract Infection Complicating Pregnancy" and will be il-

lustrated with lantern slides.

The second speaker, Dr. J. E. Moore, will be introduced by Dr. D. C. Smith of the University of Virginia, who will also preside over the discussions. Dr. Moore has charge of the Department of Syphilis at Johns Hopkins and is the editor of the *American Journal of Syphilis, Gonorrhea and Venereal Disease*, and author of "Modern Treatment of Syphilis". He is a leader in this field, not only in original work, but in his manner of presenting the subject. The title of his address will be "Venereal Disease Control in the Armed Forces". The discussion will be

led by Dr. James R. Blalock of the Southwestern State Hospital, Marion; Dr. L. F. Verdel of the Veterans Facility, Roanoke; Dr. James P. King of St. Albans Sanatorium, Radford; and Dr. E. M. Holmes, Director of Virginia Division of Venereal Disease Control.

Anyone wishing reservations for the banquet should contact Dr. W. W. S. Butler, Medical Arts Building, Roanoke.

The Industrial Health Bulletin, No. 6,

Published by the Council on Industrial Health of the American Medical Association, under date of November 30, 1940, carries a check-list covering organization and activities of Committees on Industrial Health in State Medical Societies. This check-list will be of great value to the State Committees on Industrial Health. By this they can see how far short they fall of having a complete program, and it will suggest to the Committee members activities that their Committee might undertake.

Another feature in the *Bulletin* is the composite of the courses being given in medical schools throughout the country on the subject of industrial health. This composite program, of course, is more complete than any one school is offering.

The outline for the program for the Third Annual Congress on Industrial Health to be held at the Palmer House on January 13 and 14 is referred to and the program for the Monday evening meeting is outlined as well as the clinical program for January 15. While these Congresses are for the Council and the Committee members of State Societies, especially, any physician interested in industrial medicine is invited to attend. The detailed program for the first two days is given in *The Journal of the American Medical Association* for November 23, 1940.

Anyone interested in this *Bulletin* could receive a copy by writing the Council on Industrial Health, American Medical Association, 535 North Dearborn Street, Chicago.

Seaboard Medical Association of Virginia and North Carolina.

The forty-fifth annual meeting held in Washington, N. C., December 3 to 5, was well attended and the program interesting. Dr. Waverly R. Payne of Newport News was elected president and Dr. Clarence Porter Jones, also of Newport News, was named secretary for the twenty-ninth consecutive time. The vice-presidents elected at this time are: Drs. George

Erik Bell of Wilson, N. C.; Wilbert E. Butler of Norfolk; P. A. Nicholson, Washington, N. C.; and L. L. Sawyer, Great Bridge. It was voted to hold the next meeting at the Cavalier Hotel, Virginia Beach, December 2, 3 and 4, 1941.

Councilor of Southern Medical Association.

Dr. Thomas W. Murrell of Richmond has been appointed a member of the Council of the Southern Medical Association from Virginia for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Paul H. Ringer of Asheville, N. C. Dr. Murrell succeeds Dr. Vincent W. Archer of Charlottesville, whose term of office had expired.

Medical College of Virginia News.

The General Education Board of New York has made a grant of \$168,000.00 for the further development of the St. Philip school of nursing, the unit of the college separately organized for the education of Negro nurses.

This grant will add and furnish approximately seventy-four rooms to the nurses' residence, St. Philip Hall, and will substantially enlarge the library and teaching unit. The estimated cost of this aspect of the new development is \$130,000.00.

The grant also provides \$38,000.00, over a six-year period, on a decreasing basis biennially for substantially strengthening the teaching program, especially on the clinical side.

Dedication of the new hospital took place on Founders' Day, December 5. Among those participating were Governor James H. Price; Colonel E. W. Clark; Dr. W. L. Bierring; Dr. Walter B. Martin; Dr. H. E. Jordan; M. Haskins Coleman, Jr., and Dr. Lewis E. Jarrett. President Sanger presided at the exercises which were broadcast over WRNL. Beginning at two o'clock in the afternoon the new hospital was opened for inspection to the general public and on Tuesday night, December 3, a reception and hospital open house were observed at the hospital for the local medical profession and specially invited guests. During Tuesday evening and Thursday afternoon and evening over fifteen thousand guests were shown through the new building, many from distant points.

Installation ceremonies of Beta Chapter of Virginia, Alpha Omega Alpha, were held at the Commonwealth Club, Wednesday evening, December 3.

Dr. Walter L. Bierring, National President, and Dr. J. J. Moore, National Secretary, were present, Dr. Bierring conferring the charter to the college and Dr. Moore presenting the certificates and keys to the initiates. Other speakers on the program were Dr. William T. Sanger, President of the college; Dr. Lee E. Sutton, Jr., dean of the school of medicine; Dr. William B. Porter, professor of medicine, and Dr. J. Shelton Horsley. General Hugh S. Cumming and General Merritte D. Ireland were also among the distinguished guests present. Dean H. E. Jordan of the department of medicine, University of Virginia, brought greetings from his institution. Dr. Stuart McGuire was made honorary and charter member. Faculty initiates were: Dr. Frank L. Apperly, Dr. C. C. Coleman, Dr. Harvey B. Haag, Dr. William B. Porter, Dr. Harry Walker, and Dr. H. H. Ware, Jr. Students of the senior medical class initiated were Mr. Herbert C. Allen, Jr., Mr. William E. Daner, Mr. George A. Stewart, Jr., and Mr. Adney K. Sutphin.

Dr. Porter P. Vinson was recently elected president of the alumni association of the Mayo Foundation.

President W. T. Sanger was made an honorary member of Alpha (Virginia) chapter of Phi Beta Kappa at the College of William and Mary on December 5.

Dr. Walter E. Vest and Dr. R. J. Wilkinson of the Chesapeake and Ohio Hospital, Huntington, West Virginia, were recent college visitors. Dr. J. M. Emmett of the Chesapeake and Ohio Hospital, Clifton Forge, Virginia, was also a recent visitor.

News from University of Virginia, Department of Medicine.

Dr. J. M. Meredith attended the meetings of the Southern Medical Association in Louisville, Kentucky. On November 15, he read a paper before the Surgical Section, entitled Can the Site and Degree of Trauma and the Prognosis in Head Injury Be Accurately Determined by Spinal Fluid Erythrocyte Counts? An Experimental Study.

On November 19, Dr. W. W. Waddell, Jr., addressed the South Piedmont Medical Society, meeting in Lynchburg, on the subject, Vitamin K in the Newborn.

Dr. J. M. Nokes conducted a Seminar on Obstetrics and Gynecology at the King's Mountain

Memorial Hospital in Bristol, Virginia, on November 26 and 27. The Seminar consisted of demonstrative clinics in the afternoon and a talk on the evening of November 26 on Anesthesia and Analgesia in Obstetrics and Gynecology.

At the meeting of the University of Virginia Medical Society on December 2, Dr. W. M. Nicholson of Duke University spoke on Water and Salt Exchange in Acute Alcoholism.

On December 4, Dr. Oscar Swineford, Jr., addressed the Seaboard Medical Association of Virginia and North Carolina on the subject, Asthma and Heart Disease.

At the meeting of the Blue Ridge Dietetic Association in Charlottesville on December 5, Dr. George M. Lawson discussed Food and the National Defense.

The Seventh Annual Post-Graduate Course in Ophthalmology and Otolaryngology sponsored by the University of Virginia was held at the Medical School from December 10 to 13. The list of those giving lectures included the following: Dr. Marvin F. Jones, Director of Otolaryngology at the Manhattan Eye, Ear and Throat Hospital; Dr. Andrew A. Eggston, Director of the Laboratories and Consultant Physician at the Manhattan Eye, Ear and Throat Hospital; Dr. James Milton Robb, Chief, Eye, Ear, Nose and Throat at the City of Detroit Receiving Hospital; Dr. Robert E. Moran of Washington, D. C.; Dr. David H. Massie, Instructor in Dentistry at the University of Virginia Hospital; Dr. Harry S. Gradle, Chief of the Staff, Illinois Eye and Ear Infirmary; Dr. Frank B. Walsh, Associate Professor of Ophthalmology, Johns Hopkins University; Dr. Ralph I. Lloyd, Lecturer in Ophthalmology, New York University Medical School; Dr. F. Brittain Payne, Surgeon and Assistant Pathologist, New York Eye and Ear Infirmary; and Commander J. R. Poppen, Bureau of Aeronautics, U. S. Navy. Thirty-nine physicians registered for the course.

Married.

Dr. John Edward Hamner, Petersburg, and Miss Augusta Louise Johnson, Richmond, December 14. They will make their home in Dinwiddie County.

Dr. Joseph Ney, Harrisonburg, and Miss Carol Smith Straus, Richmond, December 5. Dr. Ney is a

graduate of the Harvard Medical School in 1935.

Dr. Thomas Duval Watts, Richmond, and Miss Ruby Alice Lake, Jackson, Tenn., November 30. Dr. Watts graduated from the Medical College of Virginia in 1935.

Dr. Edward Stewart Orgain and Miss Ann Lewis, both of Durham, N. C., December 28. Dr. Orgain is a graduate in medicine from the University of Virginia in 1930 and is now on the staff of Duke Hospital.

Dr. Samuel Milchin of Bishop, and Miss Virginia Macom of Pocahontas, November 22. Dr. Milchin is a member of the class of '35, Medical College of Virginia.

Dr. Robert Richardson Eason, Buena Vista, and Miss Mabel Nash, Blackstone, December 21. Dr. Eason is a graduate of the Medical College of Virginia, class of 1936.

Sectional Meeting, The American College of Surgeons.

The College announces that a sectional meeting for Pennsylvania, Ohio, Virginia, West Virginia, Delaware, Maryland, New Jersey, New York, and the District of Columbia will be held March 17-19 at the William Penn Hotel, Pittsburgh, Pa. Hospital conferences will be held in connection with this meeting. Fellows of the College, members of the medical profession at large, and persons interested in the institutional care of the sick and injured, are invited to this sectional meeting; on the final evening, a meeting on health conservation to which the public is invited will be held.

Dr. Rucker Honored.

Dr. Marvin Pierce Rucker, Richmond, was recently honored by being elected as one of seventy founders of Phi Beta Kappa Associates, at the first annual meeting of the organization in New York City. Permanently limited to a membership of two hundred, the members of the organization are chosen for professional and intellectual attainment, service to culture, intellectual standards and the public interest.

Dr. Milton Salasky,

Who has been resident at the Brooklyn Eye and Ear Hospital for the past three years, announces the opening of his office in the Wainwright Building, Norfolk, with practice limited to ophthalmology and otorhinolaryngology. Dr. Salasky is a member of the class of '36, Medical College of Virginia.

Dr. Lee Scott Barksdale

Recently resigned his position as director of the Hopewell Health Department, which position he had held for a year and a half, to devote his time to private practice. He has opened offices in State Planters Bank Building that city.

1941 Essay Contest of Mississippi Valley Medical Society.

The Mississippi Valley Medical Society offers annually a cash prize of \$100.00 for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Details may be secured from Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Illinois.

Dr. Claude C. Coleman

Of Richmond attended the Post-Graduate Assembly of South Texas in Houston, December 3, 4 and 5, where he delivered three lectures. He also attended the meeting of the Southern Surgical Association in Hot Springs, and read a paper on "War Wounds of the Nervous System."

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Changes in Richmond Health Department.

Dr. W. A. Browne, formerly city epidemiologist, resigned his position on December 15, and is now located in Alexandria, where he is serving as health officer of that city.

Dr. B. B. Bagby, who recently retired as director of the Bureau of Child Health of the State Department of Health, will serve temporarily as chief health officer and epidemiologist, until a permanent health officer is secured.

Southern Surgical Association.

Dr. John Staige Davis of Baltimore presided at the meeting of the Association at Hot Springs, Va.,

the middle of December, at which time many interesting subjects were discussed. Dr. Harry H. Kerr of Washington, D. C., was elected president and Dr. Alton Ochsner of New Orleans was re-elected secretary. Dr. A. P. Jones of Roanoke was named as one of the vice-presidents and Dr. Guy Horsley of Richmond was among those admitted to membership. Pinehurst, N. C., was selected as the 1941 place of meeting.

Dr. James B. Shuler,

Class of '35, University of Virginia, now with the U. S. Navy, has been transferred from the USS Drayton to the U. S. Naval Recruiting Station in Chicago.

Dr. T. F. Jarratt

Has been named president of the Jarratt Ruritan Club for 1941 and was installed in this office early in December.

National Social Hygiene Day,

A public health event, will be observed for the fifth time on February 5, in the form of a concerted drive to safeguard men in military and naval training camps and in essential industries from the ravages of venereal disease. It is hoped there may be a number of community meetings at this time. Health, civic and welfare leaders and others desiring information concerning participation in Social Hygiene Day, or program aids, may secure help from Social Hygiene Day Service, American Social Hygiene Association, 1790 Broadway, New York City.

Wanted—

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Wanted—

The Library of the Medical College of Virginia, Richmond, needs one number only of the VIRGINIA MEDICAL MONTHLY to make a complete file. Any one who can supply this—Volume 12, No. 10, January, 1886—will confer a great favor.

Obituary Record

Dr. Emory Hill,

Widely known Richmond ophthalmologist, died December 4, having been in ill health for sometime.

He was born in Scottsville in 1883 and graduated from the Medical College of Virginia in 1907. After several years of post-graduate work and the practice of his profession, Dr. Hill returned to Virginia and opened his offices in Richmond. In 1929 he became professor of ophthalmology at the Medical College of Virginia, which position he held until about two years ago. Dr. Hill was a member of many organizations, among them the American Ophthalmological Society of which he was secretary from 1925 until 1932. He had been a member of the Medical Society of Virginia since 1907. His wife and two sons survive him.

Dr. Samuel Hutchings Price,

Montvale, died December 13. He was eighty-eight years of age and a graduate of the Bellevue Hospital Medical College in 1876. Dr. Price had practiced at Montvale for about forty years and was former president of the Bedford County Bank in that town. He also served as treasurer of the county for several years. Dr. Price joined the Medical Society of Virginia in 1876, resigned in 1880 but rejoined in 1891. His wife and two children, by a former marriage, survive him.

Dr. William Oliver Smith,

Altavista, died December 17, having been in ill health for several years. He was seventy-one years of age and a graduate of the former University College of Medicine, Richmond, in 1898. Dr. Smith was prominent in community affairs and had been a member of the Medical Society of Virginia for forty-one years. His wife and four children survive him.

Dr. Marmaduke Atkinson

Died at his home in Amelia County on December 2, at the age of sixty-one. He was a graduate of the Medical College of Virginia in 1901 and, after practicing for two years in Newport News, opened offices in Richmond where he remained until his retirement about two years ago. Dr. Atkinson was formerly a member of the Medical Society of Virginia. His wife and a son survive him.

Dr. Karl S. Blackwell.

As we go to press, we have just learned of the death of Dr. Blackwell, which occurred in his sleep in the early morning of December 26. Notice will appear in next issue of the MONTHLY.

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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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RICHMOND, VA., FEBRUARY, 1941

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INDUSTRIAL HEALTH—A MEDICAL OPPORTUNITY.*

C. M. PETERSON, M.D.,

Secretary, Council on Industrial Health,
American Medical Association,
Chicago, Illinois.

Practicing physicians in this country, by training and long custom, consider that the curative and preventive health needs of the population are best controlled by two agencies—public health administration and the private practice of medicine. They have seen no impelling reason why medical service to industry should not, in most cases, conform pretty largely to this basic pattern. They realize that the range of medical activity which falls under one or the other of these two important phases of industrial health is so widespread and frequently of such special character as to require the services of physicians in a number of categories of public and private employment. It has seemed to the practicing physician that none of these agencies will ever arrive at the position which will enable anyone of them singly to shoulder the entire burden of the health conservation of workers.

It is convenient, if not entirely accurate, therefore, to classify physicians in industry according to whether preventive or remedial services preponderate in their ordinary activities, since under these headings occur most of the procedures from which individual workmen are likely to draw direct and immediate health benefits. At one end of the scale is the medically trained industrial hygienist, most often associated with public health administration. He is interested exclusively in the prevention of industrial disability and uses this interest, moreover, as an important avenue through which many of the problems of adult hygiene can be solved. His work affects groups rather than the personal hygiene problems of individuals. Next there is the industrial physician engaged largely in the practice of preventive medicine and surgery within industry itself

but whose functions include also the treatment of accidents and diseases of occupational origin. As between the plant medical officer and the public health official, objectives differ only in the degree of detachment from conditions under observation and the amount of sustained personal interest which it is possible to develop in the health problems of the individual workers. Then there is the private practitioner, specialist or otherwise. Not infrequently he has refused to undertake any form of industrial medical activity. Much more commonly, however, he has been called upon by employers or insurance organizations to treat individual cases of industrial injury or disease. Up to the present time he has almost entirely overlooked industrial hygiene as a profitable extension of his own medical activity and as a means for positive contributions to the improved physical welfare of wage earners. It is no difficult concession to make, then, that physicians in each of these classifications have indispensable functions to perform for industry, that they should supplement and support each other and freely acknowledge their interdependence. The actual amount of medical activity which industry needs and which these varying types of physicians will be called upon to perform will vary considerably in keeping with local circumstances. What is of greater moment is that as industrial medical activity expands, the work of physicians in each of these categories is certain to increase rather than otherwise.

In this connection it is interesting to classify some of the reasons why the private physician has neglected to participate more fully in accident and disease prevention and in the promotion of health programs for industrial workers. This attitude proceeds naturally from the way industrial medicine and surgery developed. At the outset interest was almost

*Read at the joint meeting of the Medical Society of Virginia and the West Virginia State Medical Association at White Sulphur Springs, W. Va., July 29-31, 1940.

entirely centered upon problems of surgical repair and rehabilitation. A much more potent reason is that medical education has not been at all helpful in developing a real appreciation of the effects of occupation on health and the best means for establishing control. The amount of time necessarily spent in medical schools on individualized case study and management has prevented the assignment of sufficient attention to the principles of health conservation of groups and to the recognition and arrest of incipient disease which constitute, to a very considerable extent, the principal motivations behind the whole field of industrial health. Many physicians have intentionally withheld cooperation from the industrial health movement because of a real concern that adequate standards of medical practice could not be successfully transferred into the industrial picture because of industry's unwillingness or inability to support them. Physicians have had other misgivings about industrial medicine, such as the lack of essential qualifications of many who have undertaken this type of activity, its not infrequent status as exploited dispensary work under conditions where employer interest is too commonly interpreted as the proper function of an industrial medical service, and the methods used by some physicians to compete unfairly, not only in industrial practice but in private practice through industrial connections. Another large contributor to distaste for certain phases of industrial practice relates to the varying nature of workmen's compensation administration, largely centering in the absence of qualified medical representation, in or advisory to, compensation commissions, the illogical limitations which have been set up in relation to medical and hospital care for industrial disability and in respect to free choice of physician.

Is it safe to assume, then, that in the light of these unsatisfactory experiences the practicing physician will be willing to improve and expand his participation in industrial medical activity? Such an expectation at the present time seems entirely justified. In the first place, the growing interest of the worker and his labor organizations is compelling industry, the government, and the medical profession to investigate and recognize the important effects which occupation can have on physical well-being. The extension of workmen's compensation benefits in all but two states, particularly the assignment of benefits for occupation disease, is a most potent factor

for the rapid expansion of professional interest. Johnstone¹ has recently stated:

"Today twenty-two states make provision for all or some occupational diseases. Ominous signs indicate their rapid inclusion by the remaining states. After such enactments the responsibility shifts from a few to all physicians. The existing system of consigning the sudden fracture or laceration to the plant or company physician will continue. In such cases the causative factors are rarely in doubt. But the workman with insidious disease will consult his family or neighborhood physician on whom will be imposed the duty of determining whether the patient's condition is occupational or non-occupational in origin. In every city, hamlet, mining center or farming district a workman's ill health will become a medico-legal problem."

Lately recommendations of unusual importance regarding physical examinations have been issued by the Wisconsin Industrial Commission, under the conviction that such practices are as great a factor in the maintenance and upbuilding of the health of workers as engineering control over specific industrial exposures. It takes no unusual insight to realize that if this practice spreads many more physicians will be called upon to apply the principles of preventive medicine in industry.

Furthermore, present day technical development in industry is enormous. Health hazards multiply so rapidly as to leave distinct gaps between recognition of the causative agency and the perfection of medical and engineering methods designed to cope with them. Progress will occur only as this lag is overcome by infusing all available knowledge about occupational health exposures into the practicing medical profession as promptly as possible. The rapid increase in governmental facilities, both federal and state, for investigation and control of occupational health exposures will assist greatly in this respect. All these agencies—manufacturers' associations, trade unions, insurance carriers, compensation and other governmental agencies—have great interest in establishing the social and humanitarian values of control over industrial accident and disease. Medical organization, therefore, has a constructive influence to exert on industrial medical standards, since no other agency is in good position to evaluate medical procedure or facilitate its direct application into actual practice. To accept leadership in this field is directly in keeping with medical tradition in other specialties.

1. Johnstone, Dr. R. T. *The Teaching of Occupational Diseases. J. A. M. A.*, 114:546 (February 17), 1940.

Added to these fundamental reasons for professional interest in industrial health are related problems of utmost importance associated with national defense. A recent editorial² in *The Journal of the American Medical Association* has stated:

"Modern warfare depends on industrial production. The skilled worker becomes of importance equal to that of the man under arms; his indispensability grows as it becomes difficult or impossible to replace him. Shortages are said to exist now in certain classifications of experienced craftsmen. The problem then is not solely one of educating new workers, since long periods of apprenticeship are necessary to acquire dependable ability. More important is the task of guarding the existing supply of competent and skilled workers against preventable disability."

In relation to national defense, then, the real importance of industrial health assumes proper proportion. It is satisfying to realize that the medical profession will be much better prepared than it was twenty-five years ago to shoulder these added responsibilities, both under the pressure of preparedness as well as a continuing activity.

After consideration of these and other factors, the Council on Industrial Health of the American Medical Association has stated its belief that standards of medical service in industry must be raised and safeguarded both as to scope and adequacy. To accomplish these purposes it relies primarily on medical self-discipline and education. We have, therefore, attempted to visualize a practical working arrangement which will establish an industrial health committee in every county medical society where the degree of industrialization seems to warrant it. The membership, it is hoped, should contain representation from the fields of private practice, industrial practice, and from the local public health agency. Committees such as these ought to be of genuine value, since it is in the county medical societies where acute problems of industrial practice are encountered and can be directly dealt with. We believe that through some such mechanism much of the friction which has on occasion characterized medical relationships in industry will disappear. We hope that herein will lie at least a partial solution for the small plant employer and his employees interested in deriving benefits from advances in industrial hygiene but who, in the past, have found themselves unprepared or unable to do so.

2. Editorial. Industrial Health and National Defense. *J. A. M. A.*, 115:47 (July 6), 1940.

A program has been developed for these committees which will coordinate local resources for general or special industrial health activity. Competent sources of information about the character of local industrial operations should be established and the important health problems of each, and education should be concentrated upon these local problems. The activities of other community organizations interested in industrial health problems should be investigated in order to determine how they may be in better position under medical leadership to contribute to the physical betterment of the workers and without duplication of effort. There will be many opportunities to promote better professional education and to acquaint the general public with the accomplishments in industrial medical practice and the intention of the whole medical profession to elevate standards in this field. Interesting contributions along these lines of procedure have already been made by county societies.

These local committees will act under the guidance of committees on industrial health in state medical associations, the membership of which again might well contain representation from the three principal components mentioned above. A platform has been suggested for these state committees as follows:

1. To develop on the part of all physicians a good understanding of the proper functions of medical organization in industry.
2. To train physicians to recognize and report occupational diseases promptly.
3. To train industry and labor to the value of industrial health conservation.
4. To elevate medical standards under workmen's compensation.
5. To scrutinize all social legislation affecting the health of industrial workers.
6. To clarify relationships between industrial and private practitioners.
7. To improve relationships between physicians and insurance carriers.
8. To establish working relationships with all state agencies interested in industrial health.
9. To extend as far as possible activities of this same description into county medical societies.

Finally, to take advantage of the structure of our medical organization, arrangements have been made for the interchange of information between the local and state committees and the Council on Industrial Health of the American Medical Association, the general effect of which should be to hasten the reali-

zation of our program and to facilitate the training of physicians.

Certainly the health needs of industry represent a very considerable opportunity for medical achievement open to qualified physicians on the basis of personal initiative. The field, in fact, is largely unexplored. McCord,³ as early as 1932, stated the case well in the following words:

"Adequate industrial medicine and sanitation is now applied to not more than 4 per cent of this country's industries. No less than 5,000 factories and mercantile establishments in the United States are of such size as to warrant the full time services of one or more well-trained and well-paid physicians. This number does not include as 'factories' such enterprises as mining, transportation, forestry industries, communication, public service, banking and education. Some doubt may exist that the physician in a mining community, serving the entire population, or the railroad surgeon, doing only traumatic surgery, should be classed as industrial physicians. However, if it may be agreed that such borderline activities should be so recognized, it is reasonable to believe that no less than 12,000 physicians may advantageously be utilized in this branch of medicine. The term 'advan-

tageously' as just used embraces the interests of the worker, his employer, the industrial physician, and the medical profession as a whole. Fifty-four million dollars, the approximate sum annually paid as salary for this potential group, is but a small fraction of the monetary savings that their highly qualified services may effect in industry. If it is agreed that a prime function of the medical profession is to apply to the public those health and life-conserving measures proved by scientific endeavor to be efficacious, it must be recognized that the organization and requirements of industry afford one of the few sustained opportunities for the legitimate exigencies of medicine to adult groups."

The health needs of industry are crystallizing and a high grade of medical leadership is demanded. Major reforms are needed in the industrial medical field and they can be accomplished. The medical profession as a whole must properly orientate itself in this vast field. To do so the objectives and accomplishments of all interested agencies in medicine and outside of it must be known. There has too often been failure to bring this information to the practicing physician in the past, a failure which must be recognized and surmounted if the full scope of professional development in industrial health is to be attained.

3. McCord, Carey P. The Economics of Industrial Medicine. *J. A. M. A.*, 98:1237 (April 9), 1932.

ONE HUNDRED BLOOD CULTURES BEFORE AND AFTER TONSILLECTOMY.

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Blood culture studies following tonsillectomies have been made by numerous workers, but, until the study made by Southgate and Flake¹ in 1938, carefully controlled series were not reported. Because of this, there is great variation in the reports of the various workers, ranging from as many as sixteen positive cultures in fifty-one cases (Fischer and Gottdenker)² to none in seventy-eight cases as reported by Rubin *et al.*³

In Southgate and Flake's excellently controlled series there were seven positive cultures found in twenty-three cases, all of which were considered contaminants by these workers.

The following study was made in an attempt to clarify the picture. The technique as outlined by Southgate and Flake was closely followed.

*Written while interning at U. S. Marine Hospital, Norfolk, Va.

TECHNIQUE

1. A pre-operative blood culture was made on each case just after ether anesthesia was induced and a second culture was made between fifteen to twenty minutes after the completion of the operation.

2. Seven to ten cc. of blood was withdrawn for each culture. Venipuncture was performed under strictly aseptic technique after preparation of the skin with iodine.

3. The blood was injected into a tube of sterile Kracke's media and then incubated at 37 C. for ten days.

4. The cultures were opened on the third, sixth, and tenth days post-operatively for preparation of smears and subculture, if indicated. The latter was made on blood agar plates if the smear was found positive after intensive study.

TABLE I—ANALYSIS OF RESULTS

CASE No.	INITIALS OF PT.	RACE	AGE	OPERATION	PRE-OPERATIVE CULTURE	POST-OPERATIVE CULTURE	SURGEON
1.	H.O.	C	4½	T&A	Negative	Negative	Specialist
2.	E.S.	C	8	T&A	"	"	Interne
3.	R.S.	C	4	T&A	"	"	Specialist
4.	E.W.	C	11	T&A	"	"	Interne
5.	D.M.	C	4½	T&A	"	"	Specialist
6.	Y.B.	C	7	T&A	Diplococcus mucosus on 1st opening	"	Interne
7.	M.T.	C	12	T&A	Negative	"	Specialist
8.	L.L.	C	4½	T&A; Circ.	"	"	Specialist
9.	A.H.	W	9	T&A	"	"	Specialist
10.	E.E.	W	9	T&A	Strep. Non-Hemolyticus (Type gamma) on 1st opening	Strep. Non-Hemolyticus (Type gamma) 1st opening	Interne
11.	V.S.	W	6	T&A	Diplococcus mucosus on 2nd opening	Negative	Specialist
12.	A.W.	W	11	T&A	Negative	"	Interne
13.	S.C.	C	6	T&A	Saprophytic gram negative capsulated bacillus on 1st opening	"	Specialist
14.	M.W.	C	9	T&A	Negative	"	Interne
15.	S.B.	C	9	T&A	"	"	Specialist
16.	M.Q.	C	9	T&A	"	"	Interne
17.	S.T.	C	7	T&A	"	Diplococcus mucosus on 1st opening	Specialist
18.	W.T.	C	10	T&A; Circ.	"	Negative	Specialist
19.	H.W.	C	5	T&A; Circ.	"	"	Interne
20.	W.W.	C	9	T&A; Circ.	"	"	Specialist
21.	G.C.	W	7	T&A	"	"	Specialist
22.	E.C.	W	10	T&A	"	"	Interne
23.	R.O.	W	2	T&A	Diplococcus mucosus on 3rd opening	"	Specialist
24.	S.C.	W	7	T&A	Negative	"	Interne
25.	M.C.	W	7	T&A	"	"	Specialist
26.	J.T.	W	7	T&A	"	Saprophytic gram neg., curved thick rod, 2nd opening	Interne
27.	E.T.	C	11	T&A	"	Diplococcus mucosus on 2nd opening	Specialist
28.	C.C.	C	7	T&A	"	Negative	Interne
29.	E.C.	C	9	T&A	"	"	Specialist
30.	M.C.	C	7	T&A	"	Diplococcus mucosus on 1st opening	Interne
31.	E.F.	W	3	T&A	"	Negative	Specialist
32.	P.K.	W	6	T&A	"	"	Interne
33.	R.K.	W	6	T&A	"	"	Specialist
34.	I.E.	W	6	T&A	"	"	Interne
35.	J.C.	W	9	T&A	"	Diplococcus mucosus on 2nd opening	Specialist
36.	F.C.	W	3	T&A; Circ.	"	Negative	Specialist
37.	R.F.	C	7	T&A	"	"	Interne
38.	D.M.	C	10	T&A	"	"	Specialist
39.	E.G.	C	8	T&A	"	"	Interne
40.	L.F.	C	7	T&A	"	"	Specialist
41.	H.M.	C	10	T&A	"	"	Interne
42.	W.B.	C	11	T&A	"	"	Specialist
43.	J.S.	C	7	T&A; Circ.	"	"	Specialist & Interne

TABLE I—ANALYSIS OF RESULTS—CONTINUED

CASE No.	INITIALS OF PT.	RACE	AGE	OPERATION	PRE-OPERATIVE CULTURE	POST-OPERATIVE CULTURE	SURGEON
44.	R.B.	C	3	T&A; Circ.	Negative	Negative	Specialist & Interne
45.	J.J.	C	4	T&A	"	"	Specialist
46.	B.W.	C	7	T&A	"	"	Interne
47.	A.R.	C	8	T&A	"	"	Specialist
48.	R.B.	C	9	T&A	Diplococcus mucosus on 2nd opening	"	Interne
49.	R.B.	C	9	T&A	Negative	"	Specialist
50.	A.W.	C	11	T&A	"	"	Interne
51.	D.F.	C	11	T&A	"	"	Specialist
52.	R.H.	C	8	T&A	"	"	Interne
53.	H.K.	W	5	T&A	"	"	Specialist
54.	L.M.	W	3	T&A	"	"	Specialist
55.	R.L.	W	5	T&A	"	"	Specialist
56.	L.B.	W	6	T&A	"	"	Specialist
57.	R.C.	W	8	T&A	"	"	Interne
58.	J.R.	W	7	T&A	"	"	Specialist
59.	E.M.	W	11	T&A	"	"	Interne
60.	N.W.	W	10	T&A	"	"	Specialist
61.	B.M.	C	9	T&A	"	"	Specialist
62.	C.C.	C	11	T&A	"	"	Specialist
63.	P.F.	C	9	T&A	"	"	Interne
64.	A.J.	C	11	T&A	"	"	Specialist
65.	M.R.	C	8	T&A	"	"	Interne
66.	L.M.	C	9	T&A	"	"	Specialist
67.	E.H.	C	9	T&A	"	"	Interne
68.	W.R.	C	8	T&A; Circ.	"	"	Specialist & Interne
69.	T.H.	W	4	T&A	"	"	Specialist
70.	C.M.	W	10	T&A	"	"	Interne
71.	R.P.	W	4	T&A	"	"	Specialist
72.	A.E.	W	8	T&A	"	"	Interne
73.	L.C.	W	4	T&A	"	"	Specialist
74.	H.R.	W	5	T&A	"	"	Interne
75.	H.R.	W	6	T&A; Circ.	"	"	Specialist & Interne
76.	B.T.	W	3	T&A; Circ.	"	"	Specialist & Interne
77.	L.L.	C	7	T&A	"	"	Specialist
78.	S.J.	C	8	T&A	"	"	Interne
79.	J.W.	C	10	T&A	"	"	Specialist
80.	E.B.	C	8	T&A	"	"	Interne
81.	C.K.	C	9	T&A	"	"	Specialist
82.	M.S.	C	11	T&A	"	"	Interne
83.	D.B.	C	9	T&A; Circ.	"	Strep. Non-Hemolyticus (Type gamma) on 1st opening	Specialist & Interne
84.	R.H.	W	2	T&A	"	Negative	Specialist
85.	L.H.	W	6	T&A	"	"	Interne
86.	E.W.	W	5	T&A	Staphylococcus albus on 2nd opening	"	Specialist
87.	A.C.	W	7	T&A	Negative	"	Interne
88.	N.C.	W	9	T&A	"	"	Specialist
89.	D.K.	W	7	T&A	"	"	Interne
90.	A.P.	W	11	T&A	"	"	Specialist
91.	D.G.	W	11	T&A	"	"	Interne
92.	T.J.	W	9	T&A	"	"	Specialist
93.	A.H.	W	11	T&A; Circ.	"	"	Specialist & Interne
94.	C.P.	C	9	T&A	"	"	Interne
95.	S.T.	C	10	T&A	"	Strep. Non-Hemolyticus on 1st opening	Specialist
96.	A.R.	C	10	T&A	"	Negative	Interne
97.	M.H.	C	8	T&A	"	"	Specialist
98.	A.H.	C	10	T&A; Circ.	"	Staphylococcus aureus on 2nd opening	Interne
99.	M.B.	C	11	T&A	"	Staphylococcus albus on 2nd opening	Specialist
100.	E.E.	C	11	T&A	"	Negative	Interne

5. Cultures and smears directly from the tonsils were not taken.

CASES

Cultures were made on 100 children between the ages of two to eleven years, undergoing tonsillectomy and adenoidectomy. Thirteen of the cases underwent coincident circumcision. The operations were performed by an E.E.N.T. specialist (Dr. C. C. Cooley, chief of E.E.N.T. service at King's Daughter's Clinic), or by one of the internes of this hospital under the specialist's supervision. All tonsillectomies were performed with the Beck-Schenk tonsillectome.

All cases were from the charity wards of the clinic, undergoing the operation because of definitely diseased tonsils with palpable cervical glands, or a history of previous attacks of tonsillitis.

RESULTS

An outline of the findings may be seen in the accompanying table.

Blood from eighty-three of the 100 cases showed no growth in either the pre-operative or the post-operative culture by the end of ten days. Of seventeen remaining cases, seven showed growth in only the pre-operative and ten in the post-operative specimens.

In four of the seven pre-operative cases growth did not appear until the sixth or tenth day, and it is believed that these were contaminants introduced on previous openings of the cultures (explanation later).

One pre-operative culture, Case Number Ten, was positive for a light growth (i.e., very few organisms per h.p.f.) of non-hemolytic streptococci. The post-operative specimen from this same patient was heavily loaded with the same organisms on the first opening; hence, this case is believed to be a truly positive one.

Of the other 2 pre-operative cultures, both were believed to be contaminants because:

1. The isolated organisms were saprophytic bacteria or cocci and were not of the pathogenic variety that invade the blood stream. They were the type of common invader which normally inhabits the nose and throat, e.g., *diplococcus mucosus*.

2. The positive cultures occurred in the first portion of the study (between the sixth to twenty-fourth cases) when the author was doing both the operation and taking the culture, thus contaminating his hands

in the patient's mouth and then handling the culture tube, cotton plug and blood specimen. After the thirty-first case he no longer participated in the operation until the ninety-fifth case and the remaining sixty-nine pre-operative cultures were all found negative on the first opening. It is interesting to note that two out of the last five post-operative cultures, when the author was again participating in the operation, were positive.

3. These positive cultures occurred during the three weeks that the author unfortunately had a severe upper respiratory infection and it is quite possible to say that they became contaminated through his coughing and sneezing. This must be considered because of the numerous positives obtained during this period and their conspicuous absence in the last seventy cultures when he was no longer afflicted.

4. None of these six cases showed positive cultures in the post-operative specimens taken fifteen minutes later.

In ten cases, growth was found only in the post-operative cultures. Case Number Ten was deemed a true positive (see above), thus leaving nine positive cultures. Of these, only four were positive upon the first opening, and five were positive on the second opening after having been negative on close study of their first opening. Here, again, most of the cultures, except eighty-three and ninety-five, were positive for non-pathogenic organisms not usually found as blood stream invaders. Cases eighty-three and ninety-five are thought to be true positives because:

1. They were positive on the first opening.
2. The isolated organisms were streptococci.
3. The cultures were, in all probability, free from having been contaminated, since they were taken late in the series.
4. They were the only positive cultures in fifty cases, all of which were handled and treated in exactly the same manner.

Cases Ninety-Eight and Ninety-Nine are believed to be contaminants because they appear on the second opening and the author had again participated in the operations on the last five cases. The organisms recovered were *staphylococcus albus*, common contaminants, but uncommonly cultured from the blood stream.

SUMMARY OF RESULTS

1. Of 100 patients between the ages of two and eleven years on whom tonsillectomies and adenoidec-

tomies were performed, three cultures were found positive for pathogenic blood stream invaders. One was positive for the same organism in both the pre- and post-operative specimens, the other two being present only in the post-operative culture.

2. Six other positive pre-operative and seven other post-operative positive cultures were believed to be contaminated, for reasons stated.

3. No constant relation could be made between the surgeon and the positive cultures, since two of the three positive cultures were cases operated upon by the experienced specialist and one by the learning interne, thus indicating that the degree of trauma to the patient's throat probably had no bearing on the invasion of organisms into the blood stream.

4. There was found no variation in the clinical course, temperature elevation, or recovery of those with the positive cultures and those who did not run

a bacteremia. All cases made complete recoveries with no deaths and no complications.

CONCLUSION

The author feels that the evidence produced by this study is in favor of the fact that an "unimportant" bacteremia occurs in a small percentage of cases of tonsillectomy on children, but in not more than 3 per cent of such cases at the maximum. This bacteremia is apparently easily taken care of by the defense mechanisms of the body and is therefore of no apparent clinical significance.

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THE TREATMENT OF JUVENILE DELINQUENCY IN BELLEVUE HOSPITAL.*

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The Adolescent Ward of Bellevue Psychiatric Hospital¹ has been functioning since April, 1937. Although the adolescent period extends up to the age of twenty, we admit only those ranging in age from twelve to sixteen as we are equipped to handle only forty to fifty boys at a time. Occasionally, we admit a boy under the age of twelve if he is too big or too aggressive for the Children's Ward and we sometimes admit a boy of seventeen. The majority of our cases are referred to us from the courts but we also admit children directly from homes, schools and social agencies. The cases are referred to us chiefly because of delinquencies such as truancy, stealing, running away, fire-setting, sex offenses, and murder.² These cases represent roughly only about seven to nine per cent of all the delinquent boys appearing in the New York Children's Court. In 1937, for example, there were 4,571 delinquent boys in the New York Courts and during the first year of the existence of the Adolescent Ward, we had 496 "first admissions", of

which 353 were court cases. First offenders in the Children's Courts are rarely sent to us unless they are sex cases and the majority of the boys have had at least two or three previous court appearances and opportunities on probation before being sent to Bellevue. Thus the cases on the Adolescent Ward represent the more serious forms of delinquencies or emotional problems and have frequently been compared to the "Dead End Gangs", popularized in the theatres and movies in recent years.

Although there is considerable fluctuation in the type of cases from time to time, about 20 to 25 per cent of our cases are mentally defective as well as delinquent, about 5 per cent are psychotic (post encephalitic or post-traumatic psychoses or early cases of Schizophrenia), about 1 or 2 per cent have severe neurotic problems and the remainder are non-psychotic, non-defective behavior problems, a very small group of which are labeled as psychopaths.

Many boys are referred to us who are seclusive, withdrawn and who express ideas of reference. They are often diagnosed as cases of Schizophrenia by outside doctors and are sent to us for commitment to state hospitals. Frequently, they are intro-

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verted, come from broken homes and, because of puberty changes, acne, alteration in size and voice, and awkwardness, they become very sensitive about their appearance. They are similar to cases of social neurosis described by Schilder.³ The majority of these boys respond well to group psychotherapy, although at first they must be forced into activities, and later they adjust well in the community.

We have only about three to five definite cases of Schizophrenia each year and I mention this to emphasize the rarity of Schizophrenia in early adolescence. In the three and one-half years of the ward's existence, we had only one typical case of manic depressive psychosis, although we have had many boys referred to us following suicidal attempts; these cases were reactive depressions or emotional outbursts in psychopathic individuals.

We have had very few clear-cut cases of hysteria or psychasthenia,⁴ although we have many patients with marked hypochondriacal symptoms.

Approximately one-fourth of our adolescent patients are negroes. This ratio is higher than is found on the children's ward at Bellevue, where similar problems in both boys and girls under the age of twelve are studied. Bender⁵ states that, of the 7,000 children under observation on the children's ward in fifteen years, 1,100 were negro children. Between 1935 and 1938, the percentage of negro children rose to 18 per cent of the total ward population. Bender made a statistical analysis which showed that there is a proportionately greater number of negroes requiring public care in institutions on charges of juvenile delinquency, adult criminality, childhood behavior disorders or adult mental illness, as there are also a proportionately greater number of negroes dependent on home or work relief in New York. She believes much of this can be accounted for on the basis of social and economic disadvantages but adds that there does seem to be some evidence of a difference in the mesoderm which leads to a different reactivity of the vascular system of the negro and may cause some special deviation in organic brain conditions related to hypertension and, perhaps, syphilis. A greater variability in cranial contours may be another expression of racial mesodermal variability or anatomical primitivity. Bender describes specific reaction patterns in behavior of negro children in form of blocking, mutism, catalepsy, negativism and a facile capacity to fall asleep. These behavior patterns may be ob-

served in reaction to emotional conflicts as mechanisms of escape from intolerable situations, or in association with organic disturbances.

On the Adolescent Ward, the chief problem of the negro child is his marked aggression. The negro boy in New York is usually better developed physically than the white boy of similar age; he attains puberty earlier, and he has had a more active sex life prior to his coming to the hospital. When the percentage of colored boys is over about 15 per cent of the ward population, these boys organize groups and bully or intimidate the white boys. They display more open aggression against staff members than do the white boys.

From a sociological standpoint, the largest number of our boys are products of broken homes or else they come from homes where the parents are on home relief or its equivalent. Many of our boys are the children of psychotic or criminal parents. Negroes and children of Italian extraction form the largest part of the ward census followed by children of Irish extraction. We have very few Jewish boys on the ward and these are usually neurotic or psychotic rather than behavior problems.

As might be anticipated on a ward consisting of adolescent boys the majority of whom have been showing anti-social conduct at home or at school, considerable aggressive and destructive behavior has been observed.¹

When the ward was first opened much property damage occurred. Windows were repeatedly broken. Tables and chairs were frequently destroyed. Murals were ripped from the walls. Door knobs were broken, light fixtures were tampered with, sheets and blankets were thrown out the broken windows. These boys would ask for brooms or mops to help clean the floor and would then use the handles to puncture holes in the sound-proofing on the ceilings. They destroyed victrolas and victrola records which were being used to provide music for their dancing lessons. They would rip up keys from pianos. On one occasion they removed the metal caps from the bottom of chairs and had inserted them in the heels of their shoes to give a "sound effect" to their tap dancing. These aggressive and destructive acts have been greatly curtailed since we have better understood the underlying problems and have found the roots of many of the boys difficulties.

At times a group of boys would organize themselves as a committee to initiate each new boy. They

would usually perform their activities late at night, would force the newcomer to undress and would hit him several times on the buttocks. If he rebelled they would hit him, producing injured eyes, bruised arms, and torn clothes. Whenever we learned of such ceremonies we would have a group conference with all the involved parties, would try to point out the significance of their aggressive acts and would then be free of this initiation ceremony until an entirely new group would be on the ward. The boys justified these initiations by pointing out the initiation ceremonies in fraternity houses, and other organizations, and said that the ward gave them their only chance to be like fraternity boys in college.

Occasionally the boys organized groups such as the "Black Legion". Its avowed purpose was to "gang up" on anyone giving information about property damage to nurses or physicians. However, this group was soon found to be assaulting only Jewish boys and the guilty parties acknowledged this, saying "The Jews killed Christ."

TYPES OF TREATMENT

It is our policy to keep our patients under observation for about four weeks, because often we are not able in a shorter period of time to determine whether or not a boy will be able to adjust in the community or (should he require institutionalization) to decide which type of institution should receive him. Often boys will behave themselves for a week or two and then manifest very serious anti-social conduct, similar to that which they had previously shown in the community. In contrast, some patients on admission are very sullen and uncooperative but soon adjust well on the ward and subsequently in the community. We feel that this is one fault in the average child guidance clinic, namely, that the boy is seen only once or twice by the psychiatrist for an interview of an hour or two and then a decision is made as to his diagnosis and future placement. We feel it is necessary, not only to the delinquent boy, but to the community at large, that the boy be observed for several weeks in a set up which should duplicate as much as possible the community set up of school, play ground, etc.

In organizing the Adolescent Ward we were guided by the work of Bender on the Children's Ward at Bellevue⁶ and the work of Potter^{7, 8, 9} at the New York Psychiatric Institute. Believing that

group activities are of great value in treating behavior problems, we have, with the aid of the Board of Education and the Works Progress Administration, instituted a number of group therapy projects.

EDUCATIONAL PROJECTS

We have two full-time Board of Education classes, one being an "ungraded", the other an "opportunity" class. Children with an I. Q. of 75 or below or with severe educational retardation are referred to the first class. The children are sent to the classroom in groups of six to ten and usually are there for one hour in the morning and one hour in the afternoon. Adolescent girls from the adult women's quiet ward also attend these classes with the boys as we wish to duplicate the school set up which the children face in the community. Adolescent behavior problems are often concerned with sexual tension or conflicts, and such symptoms as blushing, shyness, over-assertiveness, flirting, etc., occur at this time. As these problems present themselves we then try to analyze them and clarify these school problems for the boys, the teachers and the parents. The school authorities transfer the "record cards" of the boys to the school in Bellevue and the children are given credit for their school work while in the hospital.

We also have a remedial teacher who tutors children with reading and arithmetic disabilities. In this class, the teacher rarely has more than three children working at one time as these children, with their handicap, are unusually sensitive to remarks of others. After a month of such tutoring, we attempt to arrange for a continuation of this tutoring once they have returned to the regular school.

ART CLASSES

The use of art in treating emotional problems has been recognized for some time and papers dealing with this therapy have been written by many workers, including Liss,¹⁰ Bender,¹¹ Despert,¹² Levy,¹³ Eng,¹⁴ Prinzhorn,¹⁵ Lewis,¹⁶ and Lyle and Shaw.¹⁷ In the art class on the adolescent ward,¹⁸ the children use water colors, crayons or pencils. We have not used finger painting for economic reasons. Some children draw on tables; others attach paper to easels and draw while standing up.

In such a class, we believe that the child should be encouraged to draw anything he wishes, rather than that he should be taught techniques to make him a successful artist.

The first task of the art teacher should be to encourage the patient to draw and the teacher should not suggest topics. His attitude should be tolerant, not critical. This attitude is necessary, as our patients often wish to draw obscene or sadistic scenes. Should a patient show marked pre-occupation along sex lines and draw overt sexual pictures, this should be permitted, but arrangements made for the patient to work in the art class when no other patients are there.

In order to encourage paintings of various types, the teacher should display the work done by the patients on the wall of the art class, and also in the physicians' offices, school rooms, etc. The teacher should make detailed notes as to the behavior of the patient in the art class, such as the way he approaches the problem, the amount of encouragement needed and should write down the comments made by the patients not only about their own art productions, but also those of their fellow workers. Moreover, patients working in an art class when doctors and nurse are not present will often feel more free to discuss their ideas on aggressiveness, stealing, and their attitude toward parents, physicians, and teachers.

After the patient has completed his drawing the teacher should interview him, asking him why he chose this particular subject, whether suggestions were given by others and exactly what he thinks the drawing represents. The patient should then be encouraged to use the "free association" method, discussing incidents which the painting has brought to the conscious level. The statement of the patient should be written on back of the drawing and handed to the psychiatrist. The physician, in his later interviews, can thus use the art material as an aid in understanding and treating the patients. Moreover, the drawing of the picture itself, from the standpoint of catharsis, expression of motor impulse, instinctual impulse, aggressive and sexual drives is of great help to the patient.

As I have said elsewhere,¹⁹ the art work is not done to make artists but to give to our patients free expression of the driving forces within them which have been damned up and led to neurotic or social difficulties.

It is necessary to consider each picture in connection with the mental problems of the patients, and this is especially true in cases of adolescents, where sexual problems often appear in symbolic

forms. Many patients are hounded by restlessness and fears and try to find peace by elaborating tranquil landscapes. Sometimes they will indulge in drawings with very meticulous details. In neurotic patients, the repressed impulse may also appear in a continuous repetition of the same motive.

One may also get leads as to the patient's emotional problems from the colors he selects. For example, patients who are aggressive will use colors such as reds and yellows, while darker colors are preferred by those involved in problems of death and annihilation. In our opinion, it makes a great deal of difference if one prefers to draw curves or angles, as the latter indicates aggressiveness. Mentally defective patients draw primitive forms such as persons with abnormally large heads, with arms and legs coming from the head or neck. Schizophrenic drawings are usually symbolic and these patients often portray pictures of eyes, breasts, crystals piercing the body and the like. Epileptic patients often use vivid red colors in their drawings.

DRAMATIC ACTIVITIES

Another form of group therapy which we use in the dramatic project.²⁰ In this activity, the boys write and act out their own plays under the supervision of a dramatic coach or nurse. Occasionally they adapt plays from stories they have read or movies they have seen. The majority of the plays are concerned with problems of aggressiveness, stealing and gang formations. They write and rehearse for the plays daily and put on one play each Saturday morning. After the play, a group discussion is held with all the patients on the ward. The children are asked if they believe the play is true to life, how they could change the plot or alter the conduct of any of the cast or change the ending. In the course of the discussion the children then spontaneously bring up more intimate problems dealing with inter-personal situations in the hospital, court, school and home. Boys whose clinical behavior indicates they dislike a parent or sibling, but who deny this in psychiatric interviews, will talk openly in the conference about similar characters in the play, describing them as hateful people who should be punished in various ways or even killed. Moreover, in the discussion, the patients will freely admit aggressive behavior which they have previously denied. With the leads thus presented to him, the psychiatrist can work more intensively in future in-

dividual psychotherapeutic conferences and can insist on further associations which lead deeper into the individuals conflicts.

The mechanism of identification and projection are clearly seen in the plays written and the selection of parts by the boys themselves. We have seen repeatedly that effeminate boys will beg for feminine roles in plays while our more aggressive boys wish to portray the gangster parts, while the schizoid boys wish to represent such persons as teachers, nurses, judges, attorneys or physicians.

At times we insist that the submissive or effeminate children play the aggressive characters in the dramatic production. In many such cases we could then see marked changes in the behavior of these children. They felt more capable of handling themselves, were less bullied and, in general, mixed better with other patients.

ATHLETIC PROGRAM

The necessity for adolescent boys in good physical condition to have an accepted socially approved outlet for their physical energy is obvious.¹ For this reason, two athletic coaches work full time on the ward, one in the morning and early afternoon, the other in the late afternoon, evenings and holidays. All children, unless physically ill, are assigned for periods of an hour or more. Whenever possible the boys are divided according to their physical size and strength. Various types of ball games, rope jumping, running games, roller-skating and boxing activities are utilized. Special lessons in boxing and wrestling are given to the schizoid or effeminate children. When these children are able to defend themselves they are no longer victimized and their mental attitude changes markedly. Moreover, many of these children, who have inadequate opportunities for play in congested parts of the city, learn for the first time to play ball, to box, etc.

The participation in sports with other children, also, is of definite socializing value.

MUSIC PROJECT

Singing classes and rhythm band activities are utilized. Singing classes are of definite socializing value and the rhythm band activities are particularly beneficial for our hyperkinetic children. Van de Wall²¹ has written in detail about the work of music in institutions.

For a time we had a WPA teacher who gave in-

struction in ballroom dancing to the boys; this was of definite socializing value also.

PSYCHOMETRIC STUDIES

Occupational Therapy and Physiotherapy.—We utilize all the regular hospital projects including physiotherapy and occupational therapy. Children with acne are treated with ultra-violet light. Fever therapy is used in selective cases of chorea and post-encephalitic hyperkinesis. Each child is given individual psychometric tests by a qualified psychologist.

MISCELLANEOUS ACTIVITIES

On the ward we have had instructors who taught the boys how to play checkers, dominoes, and quiet types of athletic games such as ping-pong and shuffle board. The teaching of such games is done not only to amuse the children and keep them occupied but serves to help them in their future social contacts.

GROUP CONFERENCES

In addition to the conference held with all the patients after the plays, we have group discussions with six to ten boys at a time. In these conferences, we discuss various types of aggressive behavior manifested by the boys on the ward. We also use such conferences to clarify their attitudes toward sexual anatomy and physiology as well as toward their ideas of illnesses in general.

Both children and adults have very distorted ideas about various types of bodily ailments and we feel it is important that they be given a better orientation about their own bodies and about disease pictures in general. For example, many boys in need of minor operations such as dental extractions, tonsillectomies, or circumcision, are terrified that they will be castrated or receive permanent injuries as a result of such procedures.

In addition to the participation in various group activities each boy has several individual psychotherapeutic conferences with the psychiatrist. In such conferences, what has happened in the various group activities is summarized and explained in its deeper aspects. It is also possible in this way to exemplify to the adolescent his own problems in the problems he sees in others and which he can recognize more readily in other boys than in himself. He learns that when the ward discipline forces him into restrictions these restrictions are socially necessary.

DISCIPLINE

We do not permit physical punishment of any kind on the adolescent ward, nor do we deprive the children of food, such as dessert, when they have been destructive.

Our policy is to bring the child into the physician's office for an interview whenever he has been assaultive or destructive. An attempt is made to understand why the child behaved as he did, and he is given another chance to join in the ward routine, but is told that if he repeats this behavior he will have to be subjected to certain disciplinary measures as his behavior cannot be tolerated if the ward is to function properly. Every child should be given a warning and a second chance. If he repeats the offense, our first disciplinary step is to remove his clothes and put him into pajamas for twenty-four hours. This is considered to be a definite punishment as it immediately singles him out from his fellows and it indicates to his relatives who visit him that he has been in difficulty. If the offense is again repeated or is more severe, he is also prevented from attending activities off the ward, such as school, occupational therapy, and athletic activities.

If a patient has a severe temper tantrum and this cannot be controlled by an interview with the ward physician, then occasionally we put a child into seclusion for fifteen to thirty minutes, explaining to him that such a procedure is necessary as we cannot permit him to continue disturbing the ward. As soon as the temper outburst subsides, he is removed from seclusion.

If we discover that a boy is showing repeated destructive behavior such as breaking windows or furniture and the above described procedures do not check his conduct, we sometimes transfer him to another ward for a twenty-four hour period. Occasionally we forbid his attendance at the movies, held weekly, if he is repeatedly destructive.

In deciding disciplinary measures, we must be guided by the diagnosis in each case. For example, post encephalitic psychotic children are often unable to control their restless, aggressive behavior. On the other hand, some boys deliberately break rules or are destructive to show their defiance of authority. Psychotic children who develop marked outbursts of aggressiveness sometimes have to be treated on the disturbed wards with various forms of hydrotherapy until the excited episode is over, after which they are usually returned to the adolescent ward.

MEDICAL TREATMENT

Each adolescent is given a detailed physical and neurological examination, and laboratory studies, such as X-rays of the skull and blood Wassermann tests, are done routinely. Under-nourished children are given special diets. Boys with undescended testicles are given endocrine therapy first, such as antuitrin S., and, if this is ineffective, we may resort to surgery. Each child is sent to the dentist for routine prophylaxis and a complete X-ray of his teeth. Diseased teeth are extracted, diseased tonsils are removed and other medical or surgical treatments are provided as the need arises. Eyes are examined and prescriptions secured for glasses when necessary.

The treatment of acne, correction of strabismus, removal of infected tonsils, treatment of chronic otitis media not only improve the patients physical condition but also has definite psychotherapeutic value.

FOLLOW-UP STUDY.

Many people working with delinquent children and adolescents are very pessimistic about their future social adaptation. Potter and Klein²² studied 175 boys and girls under fourteen treated at the New York State Psychiatric Institute and concluded that 109 (57 per cent) made unsatisfactory adjustments. The Gluecks²³ studied 1,000 juvenile delinquents in Boston, in ages ranging from six to seventeen. In a study five years later, 88.2 per cent of the patients continued their delinquencies.

Recently these two authors studied as many of these patients as they could find over an additional ten-year period, that is fifteen years after their first contact with patients, with average age of thirteen and one-half.²⁴ In this report they claim a decrease in the amount of delinquency and a decrease in type of anti-social conduct in those who remained delinquent. However, a relatively large number of offenders continue to be delinquent, 226 showing serious and eighty-eight showing minor delinquencies throughout the fifteen years.

Fenton and Wallace²⁵ report 23 per cent failures in a follow-up study in the California Bureau for Juvenile Research. Lee and Kenworthy,²⁶ in the Bureau of Child Guidance and Department of Mental Hygiene of the New York School of Social Work; Newell,²⁷ in the Baltimore Mental Hygiene Clinic, and Witmer,²⁸ in the New York Child Guidance Institute, report 21 per cent failure in follow-up

studies. Kirkpatrick²⁹ studied 1,000 delinquent boys examined in the Cleveland Juvenile Court and found 28.4 per cent failures in a study four to seven years later. Healy and Bronner,³⁰ dealing with youthful recidivists in Chicago, reported 61 per cent failure, and their studies in the Judge Baker Foundation in Boston showed approximately the same percentage of failures. Later, Shimberg and Isrealite³¹ did a follow-up study of delinquents at the Judge Baker Foundation in Boston and concluded that 66 per cent of the intellectually average and 70 per cent of the mentally defective were failures.

In an attempt to determine the value of the various types of activities used in the treatment of juvenile delinquency at Bellevue, Carroll and I³² did a follow-up study in 1939 of the first 300 court cases admitted to the Adolescent Ward between April, 1937, and January, 1938. The follow-up study was done approximately eighteen to twenty-four months after the boys left Bellevue.

Our follow-up study is open to valid criticism in that we did not personally see every boy. However, we carefully examined the probation reports of the courts, secured all available follow-up records from correctional institutions, state schools, state hospitals, social agencies, etc. All boys who were not institutionalized after leaving Bellevue on returning to court were placed on probation. In a very few cases we have no further data on the patients after they reached their sixteenth birthday sometime during 1938. In practically all cases, however, we have investigations extending up to June or July, 1939.

It might be of interest to report that our investigation revealed that our recommendations were carried out by the Judges in 86.3% of the cases.

In rough figures, we usually recommend that 50 per cent of our patients be returned home, that 25 per cent be sent to state schools or state hospitals and 25 per cent be sent to correctional institutions.

Of our first 300 court cases, we recommended probation in 128 boys and this was followed out by the Judges in 119 cases. We recommended that sixty-two boys be sent to correctional institutions and this was done in fifty-two cases. We recommended that seventy-nine boys be sent to state schools and this was done in sixty-three cases. Of the sixteen who did not go to state schools at once, two were sent home because their families opposed their commitment in the Supreme Court, eleven were sent home by the Children's Court justices and three were sent to correc-

tional institutions. We recommended that sixteen cases be sent to state hospitals and this was done in all cases. We advised that three epileptic patients be sent to an epileptic colony and in the remaining twelve cases, we suggested such places as camps, orthopedic hospitals, or placement in foster homes.

The follow-up study in 1939 revealed that 201 of the boys were at home, forty-seven were in state schools, thirty-two in correctional institutions, seven in state hospitals, one in an epileptic colony, two were dead, four could not be located, two were awaiting trial in adult courts and four were in foster homes or general hospitals.

Of the 201 at home, ten were reported as being occasional truants, but otherwise adjusting satisfactorily.

SUMMARY

This study thus shows that 67 per cent of the adolescent boys with court records were at home and adjusting well, and that only 10.66 per cent were in correctional institutions approximately eighteen months after leaving Bellevue Psychiatric Hospital. These figures are much lower than from many child guidance clinics, and in our opinion, tend to suggest that a thirty-day period of observation and treatment in a psychiatric hospital is of positive value. We would recommend that similar wards for adolescents be instituted in other psychiatric hospitals and in state hospitals.

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PHYSICAL THERAPY AS AN AID IN THE TREATMENT OF PNEUMONIA.

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The purpose of this paper is to recommend the use of penetrating heat as a simple and effective aid in the treatment of pneumonia. Electromagnetic induction as produced by the inductotherm or any similar apparatus is the type of heating to which reference is made.

It must be clearly understood that the purpose is to present this method as a complementary, rather than as a supplementary measure. It has been my experience that the use of penetrating heat to the chest makes the patient more comfortable by reliev-

ing pleuritic pain, relieving cyanosis, bringing about a sense of well-being by relieving the toxicity, and last, but not least, expediting the action of other therapeutic measures.

The physiologic effect of penetrating heat is to increase the blood supply to the part heated. Beyond this point we are unable to go at the present time; however, we know that by increasing the blood supply we will increase the number of antibodies and the amount of the chemotherapeutic agent reaching the affected part. If, in addition to this, it is possible to

relieve pleuritic pain and thereby increase the depth of respiration, we can improve the gaseous exchange in the unaffected portions of the lungs, and thus cyanosis is relieved. The increased sense of well-being is probably the result of all these factors.

The typical case of lobar pneumonia runs a febrile course for several days, at the end of which time the temperature falls by crisis. With the advent of chemotherapy (sulfanilamide, sulfapyridine, and sulfathiazole) and by means of type specific anti-serum, where practicable, this exhausting febrile period has been greatly shortened. According to Boyd, in his Text-Book of Pathology: "The *crisis* is a clinical phenomenon which cannot be explained by the pathological lesions. It is the most dramatic of changes, for in a few hours the temperature may drop 7° or 8° F., the dyspnea disappears, the respirations return to normal, and the patient passes suddenly from a condition of grave peril to one of complete safety. And yet the lung is in the same condition before the crisis as after it. A sudden detoxication occurs, but the explanation must be sought on immunological rather than morphological grounds." It is conceivable, therefore, that a non-toxic elevation of lung temperature is a desirable measure in that we are able to maintain the accelerated production of anti-bodies and at the same time bring more of the chemical agent to the lungs. It is unfortunate that there are no published studies to date on the combined use of chemotherapy and penetrating heat.

Aside from the relief of pleuritic pain, cyanosis, and the increased sense of well-being following the use of penetrating heat, it should be noted that the patient is not disturbed by the actual application of this agent. By means of a fixed pancake-shaped coil mounted on a support it is possible to give the treatment without even awakening the patient, as there is no weight on the patient's chest, nor does the patient have to be uncovered. Inasmuch as inflamed tissue is more readily over-heated than normal tissue it is best to use heat of moderate intensity at frequent intervals rather than high intensity at less frequent intervals. The best index as to the frequency of treatment is the patient's reaction. If by giving penetrating heat to the chest for twenty to thirty minutes it is possible to relieve the pleuritic pain for four hours, then such an interval is as good as any other. However, the penetrating heat may be used as often

as every hour without danger, as long as the patient's reaction is favorable.

A few words concerning the mode of action of penetrating heat may serve to clarify the picture and to differentiate this type of heating from hot packs, electric pads, and the like. Penetrating heat (electromagnetic induction) is delivered by a rubber-covered wire cable, through which runs a current of about 8,000 volts and in which the direction of the current flow alternates at a rate of 12,000,000 times a second. By virtue of this high voltage and high frequency current there is set up around this cable a very intense electro-magnetic field. When the lines of force from this field cut across the patient's tissues, heat is generated within the tissues in direct proportion to the conductivity of the tissues. In other words, since the more vascular tissues are the more conductive they receive the most heat. Lungs are more vascular than skin; hence, when the fixed pancake-shaped coil is placed over the chest, the more vascular lung parenchyma is heated to a greater degree than is the less vascular skin.

The following case report will illustrate the point regarding the relief of pleuritic pain:

The patient was a fifty-four-year-old white female who was admitted to the hospital with a chief complaint of pain in her right side accompanied by chills and fever of three days' duration. At this time her chest was clear to physical examination and most of her tenderness was referred to the right kidney area. She was running a moderate leucocytosis (11,500) and a fever between 102° and 104° F.; it was felt that she was suffering from a ureteral calculus with associated renal colic. Cystoscopy was negative. Two days after admission, or five days after the onset of symptoms, the patient began to raise bloody sputum which, on typing, revealed a type VIII pneumococcus. Physical examination at this time revealed a consolidation in the right base and X-ray examination confirmed the diagnosis of right lower lobar pneumonia. Chemotherapy and other supportive measures were immediately begun. The patient's temperature promptly fell from 104, and within twenty-four hours was ranging between 98 and 99. The patient's main complaints were nausea and vomiting and pain in the right side; cyanosis was moderate. The use of *penetrating* heat for thirty minutes twice or three times a day was sufficient to give marked relief of the pleuritic pain and in a large measure relieved the cyanosis. Chemotherapy (sulfathiazole) was stopped nine days after the pneumonia had been found. Heat therapy was continued for eleven days. The patient's convalescence was uneventful.

Another advantage to the use of penetrating heat is that it is applicable in all types of pneumonia re-

ardless of the etiologic agent. Let me illustrate this point by a second report:

The patient was a twenty-nine-year-old white male who came into the hospital five hours after a series of chills. At the time of admission his temperature was 103, his respiratory rate 30, and his pulse 110. There was moderate cyanosis, an irritating but non-productive cough, and extreme general malaise. Examination of the chest revealed fine moist rales at both bases. On the strength of the history and the clinical findings a diagnosis of bronchopneumonia was made. X-ray examination confirmed the clinical diagnosis and showed that the pneumonic process was more advanced on the left than on the right. This case was seen before sulfanilamide was in common use and, in the absence of sputum, it was not possible to obtain any lead as to the causative organism. The patient was given the routine treatment then in use which consisted of codeine, luminal, and aspirin capsules; elixir of terpine hydrate; forced fluids and so forth. In addition, electromagnetic induction, given thirty minutes every four hours, was used. At the end of twelve hours the patient's cough had diminished, his temperature was normal, his pulse around 80, and respirations were normal. He was able to force fluids and his appetite, which had been conspicuous by its absence, returned in full vigor. Despite his very pronounced symptomatic improvement, which was maintained throughout the rest of his stay in the hospital, X-ray examination three days after admission showed the process to be more extensive than before and equal on both sides. Medication was stopped after seventy-two hours, but the penetrating heat was continued for one week. The patient was discharged at the end of nine days and X-ray at that time showed marked clearing of the bases. Two days after discharge, the laboratory reported a hemolytic streptococcus as the causative organism. One month later the lungs were normal and have remained so since. The last X-ray on this patient one month ago showed normal lungs—some two years after his illness.

There is an old saying that "an ounce of prevention is worth a pound of cure"; in no condition is this more applicable than in pneumonia. The use of type specific anti-serum must, of course, await the

determination of the type of the causative organism. This precludes the prophylactic use of this measure in most cases. At the present time there is much debate as to the wisdom of using sulfanilamide until such time as a definite diagnosis has been established. The use of penetrating heat to the chest in a patient who has a severe cold, especially where there is also a moderate or a severe bronchitis, has in my experience been attended with very gratifying results. Of course, it is impossible to say that in any such case we have kept the patient from having pneumonia, for, unless pneumonia develops, one has no assurance that it would have followed had not the penetrating heat been used. However, it is unusual to see a severe bronchitis that does not respond very favorably to the adequate use of this measure.

CONCLUSIONS

1. *Penetrating heat* (electromagnetic induction) appears to be a useful adjunct in the treatment of the more common types of pneumonia.
2. Penetrating heat relieves pleuritic pain, increasing the depth of respiration and thereby relieving cyanosis.
3. Penetrating heat is not disturbing to the patient and does not interfere with any other form of treatment.
4. It is quite possible that the increase of blood supply resulting from the non-toxic elevation of lung temperature accelerates the formation of antibodies, facilitates the action of specific antisera, and makes chemotherapeutic agents more effective.
5. The use of penetrating heat as a preventative measure in patients suffering from severe colds deserves serious consideration.

I am greatly indebted to Dr. Charles W. Doughtie for his kindness in permitting me to report one of the case histories.

PROPHYLAXIS: WHY ISN'T IT A FACTOR IN THE CONTROL OF GENITO INFECTION DISEASES?

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There is no inquiry relating to the control of syphilis and gonorrhea which has provoked more heated discussion and produced fewer measurable results than prophylaxis. Metchnikoff, Roux and

Maisonneuve, in 1906, announced the epochal discovery that a properly prepared ointment containing 33⅓ per cent calomel ointment, if thoroughly applied within a short time after exposure upon the

parts where the treponemes had been deposited, would prevent the development of an initial lesion by killing the organisms before they penetrated the tissues.

This suggested method of prevention of syphilis was also presumed to have a certain amount of value in prohibiting gonococcal infection, but this point has been questioned. However, the combined use of mild silver salts intra-urethrally and 33⅓ per cent calomel ointment externally has been employed as early treatment and found to be highly effective in preventing venereal infections when used within six hours after exposure and under proper medical supervision.

Why, then, do these infections continue to lead the list of communicable diseases, and why are there nearly 2,000,000 new infections of gonorrhea and 500,000 new cases of syphilis each year in the United States? The answers to these questions are wholly unsatisfactory, for no one has any conception of the frequency of sexual exposures which occur, or the actual number of infections in the population, and no one has the remotest idea of how frequently any type of prophylaxis is used or the results of its use. There have been few experiments carried out in the civilian population and these only on small groups under special supervision, and they are not by any measures representative. The best and most trustworthy data regarding prophylaxis have come from military sources.

There are several schools of thought in the medical profession on the subject of prophylaxis and, broadly speaking, they can be grouped as follows:

1. Those physicians that see the solution of the entire venereal disease movement in teaching the public the dangers of gonorrhea and syphilis and making known the details of prophylaxis.

2. The second group recognizes the value of all methods of public health information and believes that prophylaxis is a scientifically sound procedure if it is applied promptly and under proper medical supervision such as is offered in the army and navy, but it has seen no striking results from its use in the general population. This group is not unmindful of the dangers which may result from attempted self diagnosis and treatment of a venereal infection when contracted.

3. The third group feel that by advocating prophylaxis and presumably making promiscuity safe there will be an increase in the number of exposures

and a false sense of security will be given and a higher venereal disease rate be the result.

4. In this last division will be found those physicians who are indifferent to the whole movement and have given no thought to the control of gonorrhea and syphilis.

The first group may be classified as belonging to the *optimist club*, for they have not examined beneath the surface of the subject and have accepted the written word as established fact and failed to consider how successful the program of early treatment measures has been in the general population. These physicians have knowledge of the manufacture and sale of prophylactic packets and realize that medicaments are prescribed for this purpose by a number of their confreres. They no doubt have read of the experiments which were carried out two decades ago in a few of the large cities of the country, Buffalo, New York, Baltimore and Philadelphia, which set up prophylactic stations operated on a twenty-four hour basis and were well conducted. The experience in each of these cities was the same: so few patients applied for treatment that the stations had to be closed. In one state, Pennsylvania, prophylaxis was included as one of the major items in their venereal disease program. The control officer in this state went so far as to have the state laboratories examine prophylactic packets as to drug content and efficiency and those that were found acceptable were permitted to advertise their product as having the endorsement of the State Board of Health of Pennsylvania. Another interesting item in this program was securing the cooperation of the druggists of the state, and they agreed to carry prophylactic packets in stock. Those directing this program did not take the public into their confidence and the results were negligible and the plan died aborning. In connection with this feature of the venereal disease program, the Army and Navy have never publicly condemned prophylactic tubes and they have used them in combating gonorrhea and syphilis. I am advised that tubes are available in army camps and on ships and shore stations. The efficacy of the present prophylactic tube used in the Navy has been questioned. Recently, information has been spread about that condoms are being recommended to the enlisted personnel of the Navy.

The second group mentioned above may be called the "show me" clan, and it is composed of physicians who clearly recognize the scientific value of the early

treatment plan when carried out under proper control. In this company will be found the majority of health officials. They acknowledge that from a theoretical standpoint the prevention of the venereal diseases by such measures should be effective in their control activities, but from my knowledge not one state has made a practical demonstration.

In the third group will be found those physicians who have been labeled "Plymouth Rock Puritans", as they hold the opinion that the real standard for prevention of gonorrhea and syphilis is abstinence from sexual relations except in normal marriage with a healthy person. To them it is moral prophylaxis—and there are no alternatives and no competitors. Their thesis is the prevention of contact between infected and uninfected individuals as the first principal of prophylaxis.

The fourth group requires no comments.

The discussion thus far has been limited to the several medical viewpoints of the fundamentals of prophylaxis, but what of the patient? Why doesn't he disinfect himself following every casual exposure? Surely the procedure is common knowledge as there are literally millions of men who have received instruction on the subject. There are a multitude of replies to this question, none of which is wholly satisfactory. One of the questions I frequently put to patients is, "Did you take any precautions to prevent the disease?" The replies made by the majority of them are negative ones and, when pressed as to the reasons why no prophylactics were used, the frequent answers are: "She is a nice girl and goes with good people", or "I met her at a party given by a friend", or "She looked clean", or "I wouldn't insult her by using the tube in her presence and have her feel that I thought she was diseased", etc.

There is a group of men who have a single sexual partner with whom they have more or less regular contact and, when one of this type is found to have a venereal infection, he expresses great surprise that his contact had been receiving other men. When questioned as to the kind of protection he used to prevent an infection, his reply often is, "I did not

think any protection was necessary as I have not had intercourse with any other girl for months." A surprisingly small number of men admit the use of a rubber sheath.

There are but few men who will use any form of self-disinfection following sexual relations, save soap and water, even in the presence of a prostitute, as he thinks, and often so expresses himself to the effect that he doesn't want to offend the girl with whom he has had intercourse. Surely men cannot be expected to apply an ointment or use an injection which causes irritation or will stain the fingers or clothes. If an attitude of chivalry is interfering with the early and prompt use of prophylactics, then the results of the information regarding the dangers of gonorrhea and syphilis in prostitutes and casual acquaintances have not been commensurate with the efforts and money spent upon them. If the men who visit the prostitutes fail to take precautions for cause, the men who seek clandestine partners conceivably may have the same thought to an exaggerated degree. Is it possible that chemical prophylaxis in theory has over-reached its practical value as an indispensable weapon in the venereal disease offensive? In our efforts to prevent the dissemination of gonorrhea and syphilis we have failed not for moral or medical reasons but because of the sheer indifference and carelessness of the people. Apparently men will not avail themselves of this method of protection unless forced to do so by fear of punishment or exposure to a known source of infection. Even in the armed forces, when contraction of a venereal disease brings severe penalties, many soldiers will take the risk of becoming infected rather than reporting for early preventive treatment. I realize that there are no satisfactory measures which the woman may use aside from protection with a condom at the time of exposure save antiseptic and cleansing douches afterward. The answer to my question: "Why isn't prophylaxis a factor in the control of venereal diseases?" is a "lame and impotent conclusion"—indifference on the part of the people.

159 North Dearborn Street.

SPLENIC ANEMIA COMPLICATING PREGNANCY— A Review of the Literature and a Case Report.*

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Splenic anemia is a chronic disease of unknown etiology, primary in the spleen, and is characterized by splenomegaly, secondary anemia, leucopenia, a tendency to gastric hemorrhages, and later by cirrhotic changes in the liver with ascites and jaundice.¹ It is probably the least rare of the splenomegalies.² Both sexes are equally affected.

The combination of splenic anemia and pregnancy is extremely rare, having occurred once in 19,477 parturient cases with the fetus at or beyond viability in the period from July, 1929, through June, 1938, at the Philadelphia Lying-In Hospital. Incidentally, this is the only time this combination has been diagnosed at that hospital. Hence, it is still infrequent enough to warrant the reporting of all such combinations. A review of the literature from 1918 to 1940 revealed only twelve cases reported.

CASE REPORT

Mrs. A. G. was a 19-year-old, G i, white, Italian female born in this country. She was first seen in the pre-natal clinic on November 15, 1937, at which time a review of her systems was negative except that she and her husband were on relief, and her last menses occurred September 20, 1937. Her past history revealed that she had had measles in childhood, T&A at eight years of age, pertussis at fifteen years of age, and an abscess of the right axilla at nineteen.

Physical examination: BP 120/70. Well developed and nourished; teeth moderately carious; eyes, ears, nose, throat, glands essentially negative; abdomen no masses or tenderness; pelvis gynecoid and ample; external genitalia and vaginal: marital introitus, cervix posterior and soft, uterus anterior and slightly enlarged symmetrically. Wassermann and urine negative. No blood work was done at this time.

She progressed normally until December 16, 1937, when she came to the hospital because of backache associated with a slight brownish, vaginal discharge

of twelve hours' duration. Examination was negative, so it was decided she had a threatened abortion; consequently, she was sent home to go to bed. At a routine visit three weeks later, there was no demonstrable pathology.

On January 11, 1938, the public health nurse reported that the patient was sick in bed with severe pain in her right chest and chills and fever. She was brought to the hospital immediately, and the following facts were learned: she had had weakness and weight loss for the past three years; dyspnea, vague abdominal discomfort and four pounds weight loss during the last month. For the past two days she had suffered with severe sharp pain in the right chest with chills and fever, but without cough. There was no history of edema, jaundice, urinary or gastrointestinal upset. Physical examination revealed a white, female, Italian patient lying flat on her back, and in obvious recurrent pain. There were a few rales at the right lung base which disappeared on coughing with decreased breath sounds over the same area. The spleen was palpable four fingers' breadths below the left costal margin. It was non-tender, firm, smooth, not fixed and had a sharp edge. The uterus was palpable about at the umbilicus. She was immediately hospitalized for study. Her temperature was 99, pulse 100, respiration 22, BP 98/64. Impression at this time was acute right pleurisy, Banti's disease, and pregnancy four months. Laboratory studies showed: hemoglobin 71.4 per cent; R.B.C. 3,700,000; W.B.C. 5,400; polymorphonuclears 65 per cent with 55 filaments, lymphocytes 25 per cent, monocytes 8 per cent, eosinophiles 2 per cent; bleeding time one minute; coagulation time four minutes; platelets 133,200; urine: sp.gr. 1.012, faint trace of albumin and a few pus cells. The next day the fragility test showed that hemolysis began at 0.44 per cent and was complete at 0.34 per cent; clot retraction began at five minutes and was good in two hours. Tests for malarial parasites and trichiniasis were negative. During the next four days she had nightly epistaxes without demonstrable nasal lesions, her temperature ranged from normal to 100.4, with pulse around 106 and respiration normal. On Jan-

From the Department of Obstetrics of the Philadelphia Lying-In Hospital.

*Read before a meeting of the Ex-Internes of Stuart Circle Hospital, April 10, 1940.

Summary of Authors and Patients.

Table I

Case	Author	Year	Age	Gravid	Para	Relation of onset to Gestation	Period of Gestation Delivery		Hemorrhage	Results		Complications	Treatment
							when	how		mother	child		
1	Gelli ⁽³⁾	1923	41	VII	V	over ten months previous	4 mos	Therapeutic abortion following x-ray to spleen	none	recovered	fatal	none	Therapeutic abortion following x-ray to spleen
2	Allen ⁽⁴⁾	1924	17	I	0	5 years previous	term	low forceps	none	died on table during inspection of cervix	living	irritable colon	Splenectomy five years previous
3	Allen ⁽⁴⁾	1924	28	II	I	1 st month	term	low forceps	2 hrs pp	recovered after month at hospital	living	none	X-ray during pregnancy transfusions pp
3 ₂	Allen ⁽⁴⁾	1924	29 6 mos Jacq	III	II	1 st month 2 nd pregnancy	6 wks	Hysterotomy	none	good	fatal	none	Hysterotomy Splenectomy
4	Birdsall Hubert Welchell ⁽⁵⁾	1925	53	I	0	4 years previous	term	version and extraction	pp	good	stillborn	not known	Radium for menometrorrhagia 4 years previous Transfusions during cyesis Intra-uterine radium and x-ray to spleen pp
5	Hesseltine ⁽⁶⁾	1930	42	III	II	2 years previous	7 1/2 mos	spontaneous	none	improved	living	enlarged liver and ascites	Splenectomy in 2 nd trimester paracentesis pp
6	Smith Morrison Sladden ⁽⁷⁾	1933	31	?		3 mos	term	spontaneous	none	good	living	heavy albumen last weeks of pregnancy	Splenectomy for rupture of spleen in third month
7	Fruhsholz Michon ⁽⁸⁾	1933	22	?		always had large spleen	term	low forceps	none	good	living	liver involvement with jaundice edema and albuminuria	Liver treatment and transfusion
8	Ashton ⁽⁹⁾	1934	25	I	I	puerperal anemia during pregnancy	term	forceps	immediate pp	died 33 days post splenectomy	living	hobnailed liver	Transfusion pp and splenectomy 5 mos pp.
9	Larrabee ⁽¹⁰⁾	1934	25	?		?	aborted	spontaneous	none	good	aborted	ascites pp hobnailed liver	Transfusion and splenectomy post-abortal
10 ₁	McKenzie ⁽¹¹⁾	1936	21	I		no signs	term	spontaneous	none	good	good		
10 ₂	McKenzie ⁽¹¹⁾	1936	21	II	I	immediate pp	term	spontaneous	none	good	good	mild toxemia	
10 ₃	McKenzie ⁽¹¹⁾	1936	23	III	II	See 10 ₂	term	spontaneous	none	good	good	gall stones scarred liver	Splenectomy at 3 months
11	Serbin ⁽¹²⁾	1937	33	IV	I	2 months	8 mos	spontaneous	none	died lmo pp	stillborn	enlarged liver multiple emboli to extremities, brain and pulmonary artery, pneumonia	Transfusion and splenectomy at 4 months
12	Serbin ⁽¹²⁾	1937	23	II	0	Therapeutic abortion 1934 for splenomegaly	6 1/2 mo	Vaginal hysterotomy	none	died 3 mos pp at home	died 1/2 hr pp	thrombo- phlebitis, ascites	Splenectomy in 3 rd mo. paracentosis Talmer operation

uary 16, she had a severe attack of right costo-vertebral pain radiating toward the bladder. A medical consultation was requested, and their only additional finding was a loud systolic murmur at the pulmonic area with a moderate apical systolic murmur. They felt that she had sepsis or pyelitis and a secondary anemia. On January 18, chest X-ray showed a marked increase in the lower lobe trunk markings with some patchy consolidation about the lower lobe markings. Both hilum shadows were moderately increased in prominence. Fluoroscopy and X-ray of the lungs on January 21 showed no change other than a marked increase in the prominence of the hilum lymph nodes. Fever and pulse elevation continued the same until January 24 when there was a drop to ninety-nine and ninety-six respectively which continued for the next two weeks. Blood and urine studies during this time were essentially the same except for a drop in hemoglobin to 61.6 per cent and a pyuria of 10-15 pus cells per H.P.F. with small and large clumps. Generally she was much improved, and her pain had almost disappeared. Her spleen had not enlarged any more, her liver was not palpable, and her pregnancy was progressing nicely. The only additional finding was a third heart sound at the apex. January 26 she had a marked cyanosis of the nail beds and lips, and was given 300 cc. citrated blood intravenously. January 27 there was definite evidence of fluid in the right chest posteriorly over the lower one-third. The following day 372 cc. of slightly cloudy, straw colored fluid were obtained by thoracentesis. This fluid was negative for Tb. bacilli on stained smear and culture, and the guinea pig inoculation was not of help because the pigs died of intercurrent infection. The same day she received 250 cc. citrated blood intravenously which was followed by a gradual drop in temperature and pulse to normal with rapid general improvement although the spleen had not diminished in size. Chest X-ray on February 14 showed no fluid and a marked clearing in the previously described process. She was discharged on the next day to be followed weekly in the prenatal clinic. Hemoglobin 71.4 per cent; R.B.C. 3,900,000; W.B.C. 6,400; polymorphonuclears 66 per cent with filaments 56, lymphocytes 29 per cent, monocytes 4 per cent, eosinophiles 1 per cent; platelets 200,000. Urine was the same. On readmission March 16, for a check, her heart was slightly enlarged, the

right lung base did not expand well, and the spleen was slightly larger. Blood and urine were essentially the same. Chest X-ray was negative. She was followed in the prenatal clinic without mishap until June 3 when she came to the hospital in labor. She was delivered after thirty-one hours and fifty minutes of labor with nembutal gr. ivss and scopolamine gr. 1/150 sedation, by outlet forceps with episiotomy, of a living female child, weight five pounds eleven and one-half ounces, vertex R.O.A. The third stage was eight minutes long. There was no excess bleeding. Blood and urine showed practically no change during hospitalization. Puerperium was uneventful except for a mild endometritis. Sternal puncture showed hyperplastic marrow with preponderance of myeloid activity. Mother and child were both discharged in good condition on the fourteenth day. The liver was two fingers' breadths below the costal margin, firm, sharp edged and non-tender; the spleen reached just below the umbilicus. Two weeks', two and three months' follow-up examination showed her condition to be the same.

She was transferred to surgery for a splenectomy, which was done on September 24 under spinal anesthesia supplemented with ether. At operation the liver was enlarged and had many superficial cyst-like areas over its surface. Pathological report: Banti's disease. R.B.C. 4,600,000; hemoglobin 83 per cent; W.B.C. 5,100; polymorphonuclears 71 per cent, lymphocytes 20 per cent, monocytes 3 per cent, eosinophiles 6 per cent. She convalesced well except for a bronchitis, and at follow-up in September, 1939, she had no complaints, but her liver was still enlarged.

TABLE II—AGE OF PATIENTS

Age	No. Cases
1-10 years	0
11-20 "	1
21-30 "	6
31-40 "	3
41-50 "	2

The majority of the patients was between twenty-one and thirty years of life, and the next highest group was between thirty-one and forty years. This is explained by the fact that most women have their babies between twenty and forty years of age.

TABLE III—GRAVIDITY OF PATIENTS

Gravidity	No. Patients
I	3
II	3

III	3
IV	1
V	0
VI	0
VII	1

Gravidity of the patient apparently bears no influence on the susceptibility to splenic anemia. Parity follows gravidity except that chronic diseases or anemia predispose to abortions if allowed to become grave.

TABLE IV—ONSET RELATION TO GESTATION

Before conception	6
1st trimester	3
2nd trimester	0
3rd trimester	0
Puerperal	2

Six patients first noticed symptoms referable to splenic anemia before they conceived, three during the first trimester, none during the second and third periods, and two postpartum. It is not stated when one patient first noticed her symptoms.

TABLE V—PERIOD OF GESTATION AT DELIVERY

1st trimester	2
2nd trimester	2
3rd trimester	
7th month	1
8th month	1
9th month (term)	9

The discrepancy in the above figures is due to two of the patients having repeated pregnancies while they had a splenic anemia. During the first trimester one six weeks interruption was done because of the splenic anemia, and the other patient aborted spontaneously following a gastric hemorrhage. In the second trimester there were one four months and one six and a half months interruption because of the anemia. In the third trimester, there were eleven deliveries, one in the seventh month, one in the eighth month, and nine at term. There were no therapeutic interruptions during this period.

TABLE VI—HOW DELIVERED

1st trimester.....	1 abdominal hysterotomy
	1 spontaneous abortion
2nd trimester.....	1 vaginal abortion
	1 vaginal hysterotomy
3rd trimester.....	6 spontaneous deliveries
	3 low forceps deliveries
	1 forceps delivery
	1 version and extraction

In the first trimester there was one therapeutic abortion because of splenic anemia; in the second tri-

mester both interruptions were therapeutic because of the anemia. In the third trimester there were six spontaneous deliveries, three low forceps, one unqualified forceps and one version and extraction.

TABLE VII—VAGINAL HEMORRHAGE

During pregnancy.....	0
Postpartum.....	2 within 2 hours
	1 delayed

Two patients hemorrhaged within two hours postpartum, and one had a delayed hemorrhage, making an incidence of 33.07 per cent. All three patients required transfusion. One of these patients required one month of hospitalization before she was able to go home; one died thirty-three days after splenectomy, five months postpartum; and the other required intrauterine radium and X-ray to the spleen to control hemorrhage.

TABLE VIII—RESULTS FOR MOTHERS

Recovered	9
Died	4

Three of the patients died, one during inspection of the cervix, one thirty-three days after splenectomy, done five months postpartum when it was found she had a hobnailed liver, and the other died three months postpartum after several paracenteses and a Talma operation done for ascites.

TABLE IX—RESULTS FOR FETI

Interrupted before viability	4
Stillborn	2
Living	9

Of the four patients whose pregnancy was interrupted before the period of viability, three were therapeutic and one spontaneous. Of the two stillborn feti, one was born at term and the other at eight months. Of the nine living offsprings eight were term pregnancies and one seven and one-half months.

TABLE X—COMPLICATIONS

Toxemias	2
Gall stones	1
Embolie phenomena	1
Pneumonia	1
Thrombophlebitis	1
Irritable colon	1

Two patients developed mild late toxemias, one had cholelithiasis, one had multiple emboli and pneumonia and died, one developed thrombophlebitis and one an irritable colon. Enlarged liver and ascites is not included here because it is considered as the third stage, or Banti's disease.

TABLE XI—TREATMENT

X-ray to spleen during pregnancy.....	2
Transfusions during pregnancy.....	3
Transfusions following delivery.....	2
Splenectomy before pregnancy.....	1
Splenectomy during pregnancy	
1st trimester	3
2nd trimester	2
3rd trimester	0
Splenectomy following end of pregnancy..	3
Paracenteses	2

Two patients received X-ray therapy to the spleen during pregnancy. One of these underwent a therapeutic abortion and the other gave birth to a living child at term. Both mothers in this group recovered. Three patients received transfusions during pregnancy, and one of these also underwent a splenectomy a few days later. One patient receiving transfusions had a stillbirth at term, one had a term livebirth, and the third one had an eight months stillbirth. The first two mothers recovered, and the last one died one month postpartum of multiple emboli and pneumonia. The one patient having had a splenectomy five years previous to pregnancy gave birth to a living child at term, but she died during an inspection of the cervix.

There were five patients who underwent splenectomy during pregnancy, three in the first trimester, two in the second trimester. Of the three in the first trimester, two had livebirths at term, one gave birth, by vaginal hysterotomy, to a living child at six and one-half months, although it died in a half hour. The first two mothers recovered, but the third one died three months postpartum, the cause of death not being given. Of the two patients in the second, one mother recovered after a seven and one-half months livebirth; the other also had transfusions and had a stillbirth at eight months and died one month postpartum of multiple emboli and pneumonia.

Of the three patients undergoing splenectomy after the end of the pregnancy, one had a spontaneous abortion, one had a therapeutic hysterotomy at six weeks, and one gave birth to a living child at term. Two of the mothers recovered, and one died thirty-three days post-splenectomy, five months postpartum.

Both patients who underwent paracenteses were postpartum, and one of them underwent a Talma operation and later died.

COMMENT AND DISCUSSION

The rarity of the concomitancy of splenic anemia and pregnancy is well expressed by the fact that it is only mentioned as a possibility in most of the standard textbooks on obstetrics and in some it is not granted that much notice.

Its occurrence for the most part between the years of twenty and forty is because splenic anemia usually starts in youth and progresses, and most women have their families during the third and fourth decades of life.

Gravidity and parity bear no direct relation on the occurrence of splenic anemia, but splenic anemia might conceivably set up a sterility or low fertility in a woman having it just as any chronic debilitating disease might. For this reason it is important that once diagnosed during pregnancy prompt treatment be instigated and continued. Furthermore, it is generally thought that pregnancy aggravates the co-existing splenic anemia for two reasons: 1.—Pregnancy predisposes to anemia, and, 2.—Pregnancy is an added drag on the liver.^{11, 12}

The symptoms referable to early splenic anemia are those of many uncomplicated pregnancies and secondary anemias. However, it is conceivable that a woman having splenic anemia with pregnancy would have more pronounced symptoms, but, with modern prenatal care, most cases would be diagnosed and treated early.

The method of delivery of a given patient will depend on the line of procedure chosen. If it is elected to interrupt the pregnancy, the method will be contingent upon the stage of the pregnancy; if not, the patient should be carried to term and the type of delivery best fitted for that patient should be done.

The occurrence of vaginal hemorrhage seems to be limited to the postpartum stage, and the incidence is rather high, being 33.07 per cent. It is interesting to note that two of the three patients having hemorrhage were treated for the anemia during cyesis, one with X-ray to the spleen and one with transfusion. The reason for the hemorrhages is not the same as that for gastric hemorrhages. It is more than likely explained on the fact that chronic disease or anemia predisposes to postpartum hemorrhage. Berkeley¹³ feels that splenic anemia predisposes to hemorrhage postpartum.

The gross mortality was 33.33 per cent; however,

only one of the three deaths was before the end of the prescribed puerperal period. It is purely a matter of conjecture whether or not these women would have died had not the splenic anemia been present. The outcome for the fetus was no better. The mother of one stillbirth was splenectomized at four months and the other transfused during pregnancy. There were one spontaneous abortion and three therapeutic interruptions before viability. From the figures it is hard to judge what the outcome for the child is, although the stillbirth incidence is 13.3 per cent.

The complications were those that might occur during or after any pregnancy. Stander¹⁴ states that one out of every eleven pregnancies has a toxemia of some degree. In this series there were two out of fifteen pregnancies which is a slight but not remarkable increase. Hesseltine⁶ does not feel that splenic anemia predisposes to toxemia because his patient went to seven and one-half months when she delivered spontaneously without the occurrence of a toxemia.

The treatment should certainly be started early. X-ray to the spleen is certainly contraindicated, I believe, if it is elected to carry the pregnancy to term because of the possible harmful effects on the fetus. However, Snead¹⁵ feels that the usual dose of splenic X-ray is too small to harm the fetus, and he is also of the opinion that splenic X-ray is of no value in splenic anemia. Of the five patients undergoing splenectomy during pregnancy, both mother and child were lost in two cases at or after delivery. In two of the four pregnancies therapeutically or spontaneously interrupted before viability, only one mother was lost. It seems more logical to me to interrupt the pregnancy and remove the spleen before another pregnancy occurs if splenic anemia is diagnosed a reasonable length of time before viability. An enlarging uterus and spleen will cause a great deal of discomfort, and the chances of splenic misfortune are added to those of the pregnancy. If the fetus is viable, carry the pregnancy to term and then conduct the delivery as best suited to the individual with all preparations having been made to combat hemorrhage. Berkeley¹³ agrees with this thought. Regardless of the choice of procedure, the patient should be watched carefully, transfused whenever necessary, and the spleen removed as soon as possible after the end of the pregnancy, if it is elected to carry the pregnancy to term.

CONCLUSIONS

1. A case of splenic anemia complicated by pregnancy is reported and the literature reviewed.
2. Splenic anemia complicated by pregnancy is a rare occurrence.
3. The ages of occurrence of splenic anemia and pregnancy are the same.
4. Pregnancy aggravates the splenic anemia.
5. The symptoms of early splenic anemia and early pregnancy are similar, disregarding amenorrhea.
6. Splenic anemia predisposes to postpartum hemorrhage.
7. The gross maternal mortality was 33.33 per cent.
8. The stillbirth rate was 13.3 per cent.
9. Splenic anemia probably predisposes to toxemia.
10. The patient should be transfused as needed regardless of other treatment.
11. If splenic anemia is diagnosed before viability, the pregnancy should be interrupted. If diagnosed after viability, the pregnancy should be carried to term with all preparations having been made to combat hemorrhage.

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A CONSIDERATION OF PELVIC AND UTERINE ENDOMETRIOSIS.*

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Consideration of the problem of ectopic endometrial tissue should arouse the interest of every practitioner of medicine. Conjecture as to its mechanism of production, its varied and varying symptomatology, the pathology-production of its life cycle, and the different management and treatment required—all are challenges to our scientific approach, technical and diagnostic capabilities, and, probably most important of all, our clinical judgment. For the condition, although seldom life-threatening, is pain-productive, induces sterility, and in its end-results is disabling functionally and organically. The frequency of its occurrence and its insidious and often gradual onset suggest it as a potential cause of many obscure pelvic complaints.

well correlate certain known pathologic facts with clinical aspects in outlining the life history of the subject, that his name and the name of "endometriosis" are nearly inseparable.

Adenomyosis uteri is sometimes referred to as *endometriosis interna*. Here we see the occurrence in the uterine wall of smooth muscle and endometrium in combination as a diffuse infiltrating process, grossly discernible as scattered knot-like masses, simulating small myomas. Microscopically and characteristically, these are collections of endometrial glands, ensheathed more or less by strands of hyperplastic smooth muscle, and hyperplastic cytogenous stroma. There is no definite capsule seen as in myoma, and these nodes are not separable from the

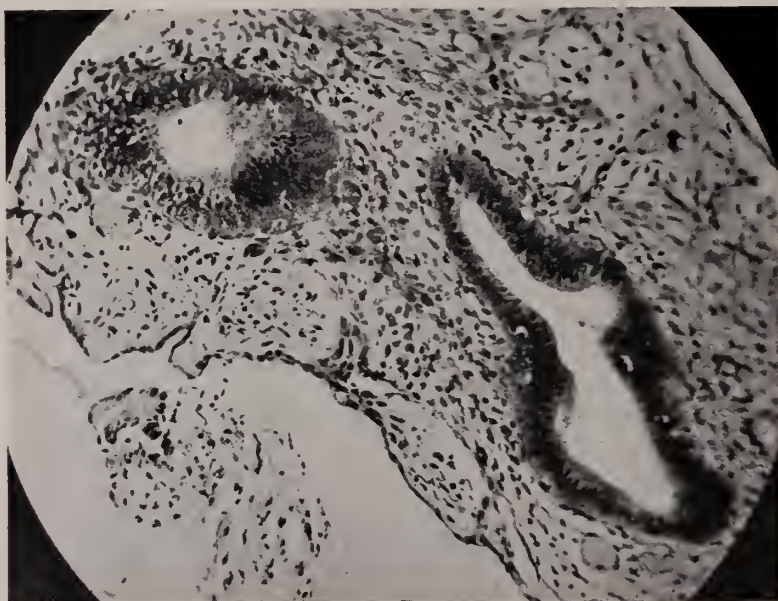


Fig. 1.—Endometriosis of ileum. Well formed endometrial glands with surrounding stroma. Distinct endothelial surface with adhesions due to irritating inflammatory reaction. Glands show secretory activity.

Unfortunately, there is still considerable vagueness in the minds of many as to the nature and meaning of endometriosis and adenomyosis uteri. The former had been known and recognized for years, but it remained for Sampson in 1921 to so

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musculature of the uterus. These endometrial growths are often seen very deep in the myometrium, but are always continuous with the rest of the endometrium, and represent deep down growths of the glands. This seemingly indicates that these uterine adenomyomas develop from post-fetal endometrial glands, rather than embryonal Müllerian rests. Where the adenomyotic uterine growths have no

communication with the mucosal glands, a reasonable explanation as offered by Sampson may be accepted. Living mucosal fragments have been demonstrated to escape into uterine wall sinuses or lymphatics during menstruation. Such metastatic fragments may continue to grow and produce adenomyosis with no uterine cavity communication. These endometrial wanderers participate in a varying degree in the cyclic changes of the normal endometrium, but there is always intense active hyperemia in the islets, and frequently hemorrhage, during the menstrual phase.

Some prefer to separate the so-called "discrete adenomyoma" from adenomyosis interna, and look upon it as an uncommon, small to orange-sized, single lesion developing at the time of sexual activity from a fetal anlage. The result is a tumor grossly comparable to a fibromyoma but without capsule, and intimately connected to the surrounding myometrium.

Patients with adenomyosis interna usually have pre-menstrual and menstrual pain due to congestion and swelling, often with hemorrhage, in the islets of endometrium buried in the myometrium. There is generally menorrhagia, pre-menstrual enlargement of

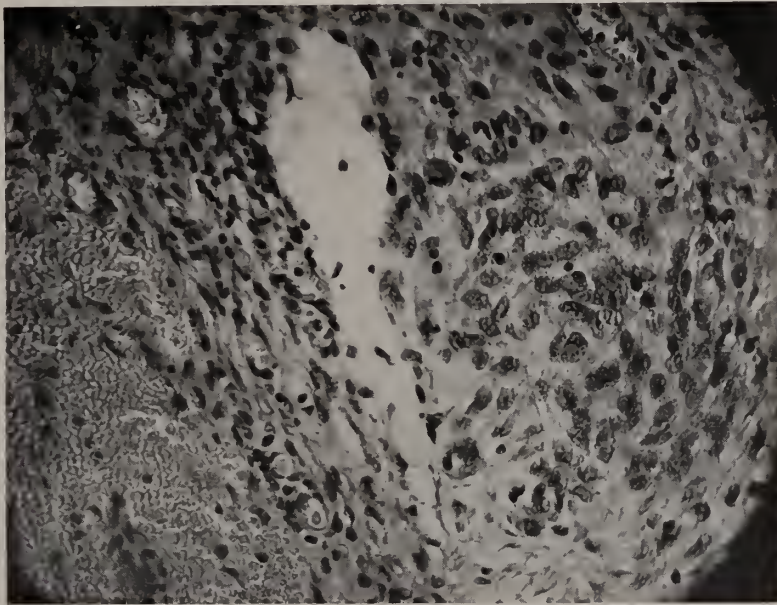


Fig. 2.—Marked decidual reaction surrounding an ectopic endometrial gland. Obvious hemorrhage with inflammatory reaction.

The possibility of ectopic endometriogenesis from the pelvic peritoneum, which was the anlage of the Müllerian epithelium, cannot be completely discounted, especially when considering subperitoneal adenomyosis of the uterus. More likely, however, is the mechanism of transtubal implants on the uterine serosa, with subsequent engulfing and subserosal isolation.

The histolytic action of endometrial tissue, which permits it to invade other tissues, seems to be derived from the cellular stroma surrounding the glands. This cytogenous stroma surrounding endometrial glands distinguishes it from other glandular structures, and is subject to ovarian endocrine influence. It appears almost without exception not only in the adenomyotic uterine lesions, but in the heterotopic growths presently to be discussed.

the uterus, and all occurring in the pre-climacteric years. These women have generally borne children, but a late secondary sterility is frequently noted.

In adenomyosis, the uterine enlargement is seldom marked, rarely exceeding grapefruit size. The diffuse nature of the lesion generally produces a symmetrical enlargement, but more discrete growths often produce knot-like masses simulating myomas. Co-existing true fibromyomas are frequently seen, but easily distinguishable on cut surface from adenomyomas.

It is of interest that adenomyosis interna does not respond to hormonal stimulation as notably as ectopic endometriosis.

The treatment for adenomyosis is surgical; curettage and radium therapy are generally inadequate. Nearly 10 per cent of uteri removed after forty years of age are found to contain adenomyomas, about

2 to 3 per cent contain a concomittant malignancy, and nearly half of these patients will have had a previous pelvic operation.

ENDOMETRIOSIS

For clarity, it may be advisable to consider first the three types of ectopic endometrial pathology as considered by Sampson.

The most common type and location of endometriosis is peritoneal or subperitoneal. A second type is ovarian endometriosis, which is most commonly

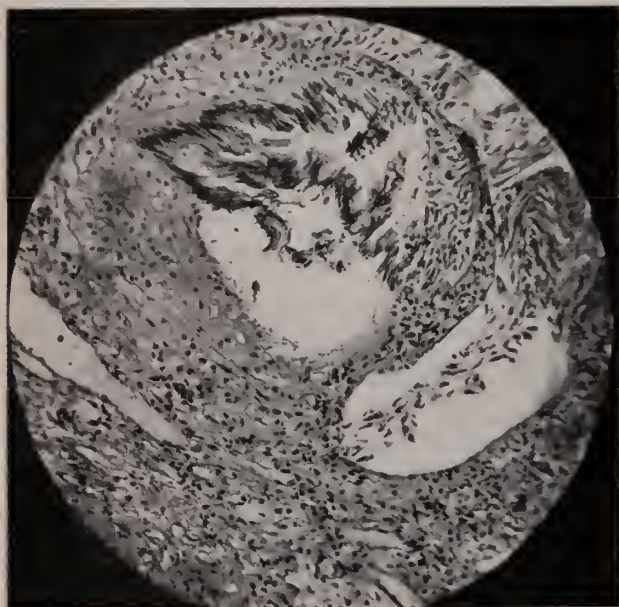


Fig. 3.—Endometriosis of the recto-vaginal septum. Typical structure and stroma. "Menstruate" and fill with blood—seen vaginally as sub-epithelial, often blue-domed cysts, and easily palpable in back of cervix.

allied to peritoneal endometriosis, and, third, extra-peritoneal endometriosis, occurring outside of the peritoneal cavity; e.g., the rectovaginal septum, the umbilicus, in the round ligaments and the groin, etc.

The theories concerning the origin of this ectopic uterine mucosa are of considerable interest, and will bear brief mention, although no one is completely satisfactory.

The most commonly accepted theory of endometriosis is that of Sampson, who believes it due to re-implantation on the peritoneal surfaces of endometrial tissue cast off at menstruation and disgorged through the tubes.

The regurgitated cells lodge and grow upon the ovary, and from there spread to other pelvic viscera and peritoneum, forming localized adenomata which react to the hormonal stimulus of menstruation as

does normal endometrium, and may produce recognizable hematomata of varying size. A deep invasion of the ovary will produce a so-called "chocolate cyst" which must eventually rupture to spread its endometrial lining to further structures, there to continue the cycle. The escaping contents set up a marked irritative process, with resulting dense adhesions. As already noted, Sampson further believed that endometrial cells could and would metastasize through lymph channels, and possibly even through venous channels.

It is difficult to explain all sites of endometriosis upon Sampson's theory but for the majority of cases it is the most acceptable. Novak disbelieves all of this. He doubts that cast off endometrium can grow, even if one hypothesizes retrograde tubal menstruation. The latter should be mechanically difficult for it predicates the successful migration of endometrial pieces backward through the tortuous lining of the tube. However, Jacobson, Dossena, Szenes and others have been able to produce endometriosis experimentally, using endometrial tissue.

Von Recklinghausen in 1896 proposed the Wolfian body remnants as the cause of adenomyomatous lesions.

The serosal theory (Meyer) is based upon the demonstration that epithelial heterotopy can occur in the peritoneal serosa with transformation to cylindrical or cuboidal cells. The peritoneum, under influence of inflammation and possible endocrine activity (Novak) can alter the character of its latent cells. The connective tissue about a peritoneal inclusion can be excited to a hyperplasia that suggests the cytogenic stroma of the uterine mucosa.

It is true that the coelomic mesothelium is the common ancestor both of the peritoneum and genital epithelia. It is possible that the developmental potentialities of the less differentiated structures, such as the pelvic peritoneum, may be aroused in adult life by unusual endocrine stimulation, with resulting metaplasia into endometrial epithelium.

There are certain observers (Cullen, Norris, Janney, Blair, Bell) who believe endometriosis to be due to aberrant portions of the Müllerian duct, pointing to the anatomic association and embryologic origin of both duct and ovary from the coelomic mesothelium—the so-called Müllerian or coelomic theory.

Halban (and in some instances, Sampson) thinks that the condition is due to endometrial metastases

via the lymphatics, while Schiller thinks a metaplasia of the endothelial lining of the lymphatics is the answer.

However this may be, the misplaced endometrium is derived from either (1) true endometrial or Müllerian tissue, derived from tubal or uterine mucosa (heterotopy), or (2) endometrial tissue, arising from a metaplasia of the peritoneum or from other sources (cytogenesis).

PATHOLOGY

Histologically, the misplaced endometrial tissue is like that of the uterine mucosa, the reaction against it is like that seen and described above in adenomyosis, and it is governed by the same physiobiologic laws that control uterine mucosa in its cyclic changes, and in pregnancy, lactation and menopause. This recognition of its response to ovarian influence is essential in understanding its pathologic physiology.

Upon the ovaries are seen some of the most striking changes. There may be small surface adenomas, seen as small red or purplish bodies, or puckered blue-spot areas, multiple and in various sizes, on one or both ovaries. The ovaries are usually adherent, a manifestation of the irritating nature of the lesion. When the ovarian lesion is deep-seated, then through successive hemorrhagic cycles accompanying physiologic menstruation there is accumulated an ever-increasing content of intracystic blood, which through hemolysis and concentration becomes thick and tarry—the chocolate cysts of endometriosis.

Adhesions are dense, the spread is wide, and little wonder that in former years these lesions were frequently considered inoperable carcinoma.

The invasion of small intestine, sigmoid and other structures simulates malignancy, although the lesion is not histologically malignant. The epithelium is, however, subject to the same malignant changes as normal uterine mucosa, and such changes have been noted and recorded. It is more than likely that a large number of ovarian adenocarcinomas arise from malignant change occurring in endometrial implants in the ovary.

Vaginal endometriosis or adenomyomas of the rectovaginal septum are often seen, and are generally directly continuous with culdesac peritoneal endometriosis. These present a definite clinical entity, for they are directly in back of the cervix, are tender, respond to hormonal changes, and histologically present the picture described for all adenomyomas.

All of the ligaments touching the uterus have been found to contain endometriomas; likewise the umbilicus and abdominal wall, the latter especially after operations involving an opening into the *fundal portion* of the uterus, as in high or classical cesarean sections. Also, the inguinal regions and even the perineal region (Palmer) have been noted as sites for endometriosis. Even the appendix (Curtis) has been involved.

In a recent case, I found three endometrial lesions involving the distal ileum, about six inches apart and partly constricting the bowel. This was part of an endometriosis which combined the picture of advanced ovarian and pelvic peritoneal endometriosis, with adenomyosis interna and uterine fibroids in a nullipara of twenty-four years—a rare combination at that age.

CLINICAL PHASE

While I have operated upon approximately ninety patients with endometriosis, the most recent eighteen cases encountered in the past two years have been chosen for close scrutiny. These were all private cases and therefore submitted to more careful study, and all have been followed to date.

Typically, endometriosis is seen in women during active menstrual life, between twenty-five and forty, usually married, usually sterile, although half will have had one or more pregnancies. There is often complicating pathology.

Uterine fibroids are frequently accompanists, one-third in this series. Adenomyosis of the uterus was demonstrated pathologically in 60 per cent of these cases.

Abdominal pain is the most common complaint, varying from distress and heaviness to acute pain accompanying or preceding the menstrual flow. Backache is occasionally noted; two patients in a group of eighteen cases, who had rectovaginal endometriosis, complained of backache, abdominal distress and pressure, and painful bowel movements at catamenial periods.

Of the various menstrual disturbances, menorrhagia was most common, and seen in one-half of the cases. Dysmenorrhea, usually of the acquired type, and frequently pre-menstrual, with menstrual exacerbation, was noted in one-third of these patients. Constipation was a common complaint, but hard to evaluate as a specific correlated symptom. All of my patients were white.

While there are no constant physical findings, a persistent painful retroversion in a sterile patient, associated with menorrhagia, backache, adherent ovaries, ovarian cysts and tender utero-sacral ligaments, in the absence of other pelvic inflammation, is extremely significant. A swollen ovary, chocolate cyst, or matted pelvis may be palpable. Shotty nodules in the culdesac, or blue cystic nodules in the posterior vaginal fornix are nearly positive evidence of endometriosis. As might be expected from the pathology and area of involvement previously described, the symptoms will depend not only upon the extent of the inflammatory reaction and adhesions but also the manner in which the various organs are involved.

Dyspareunia is commonly complained of, with subsequent loss of libido. Sacral backache indicates utero-sacral and pelvic spread with lower abdominal distress. Lesions will be observed to grow rapidly, in certain instances, after laparotomy, tubal insufflation, and intrauterine manipulations near the time of menstruation.

TREATMENT

Prophylactically, pelvic examinations, tubal inflation tests, douches, curettages and intrauterine manipulations should not be done near menstruation.

Since endometriosis is a condition found in young women, conservative surgery is generally indicated, even though re-operation may be required subsequently. Conservative operations not infrequently may be expected to fail, since the pseudo-malignant, locally invasive and metastatic nature of the lesion, persisting as long as ovarian activity remains, of necessity constitutes a hazard. Total ablation of the pelvic viscera is rarely justifiable in a young woman. With few exceptions, radio-therapy should not be employed, since extensive adhesions and cicatricial changes account for some of the most distressing symptoms. Radiation furthers these changes and increases the discomfort, although castrating doses will effectively check further endometrial activity. Even

more important is the possibility of error in diagnosis, with the actual pelvic pathology due not to endometriosis, but to tubercular infection, cancer, or some other lesion which could not be helped by radiation. Small tarry cysts and replacable retroversion are amenable to conservative procedures, although separation of the extremely dense adhesions increases the operative hazard.

In advanced cases with hopeless pelvic involvement, extirpation of the ovaries will prevent further extension and cause complete atrophy of the endometrial tissue. It will not undo the cicatricial damage nor adhesions already present. The most feasible approach is surgical, with restoration of visceral relationships if possible, extirpation of large grumous cysts, and ablation of uterus and ovaries when obviously necessary. The exceptions are rectovaginal and bladder endometriomas not associated with demonstrable ovarian or intrapelvic lesions. Here, obliteration of ovarian function by radiation is advised. Post-operative endometrial fistulae and umbilical and scar endometriomas are widely excised.

Associated bladder symptoms or symptoms of pyelitis are not common, but should induce a careful observation, cystoscopy and pyelography before any operation.

In conclusion, let us remember in dealing with ectopic or misplaced endometrial tissue that we are dealing with a histologic structure comparable in histology and physiology with normal uterine mucosa, and subject to the same biologic laws and hormonal stimulation; that the pathologic changes induced are due largely to the elements of spread by contiguity and fibrous tissue response to irritating "tissue-menstruation". And, finally, that treatment depends not only upon the extent and manner which the pathologic process manifests itself, but also upon the marital, social and extra-pelvic physical status of the patient herself.

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SURGERY OF THE BILIARY TRACT.

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Surgery of the biliary tract is at the present time one of the most common and successful types of surgery. The first gall-bladder was removed presumably by Langenbeck in 1882.¹ Within a short period cholecystectomy and cholecystostomy became accepted methods of treating gall-bladder disease. The mortality rate in those early years was rather high and there were frequent unexplained deaths. Improvements in technique, better understanding of liver function, more perfect diagnostic aids, and adequate pre- and post-operative care have in recent years brought down the mortality until it now compares favorably with surgical procedures of much smaller magnitude.

We will discuss a few of the impressions which we have gained from the surgical treatment of almost one hundred cases of biliary tract disease during the past few years. In this series there were no deaths.

Diagnosis: It may appear trite to say that accurate diagnosis is based primarily on a carefully executed history and physical examination. It is none the less true. Of the laboratory aids, cholecystography ranks first and is accurate in better than 90 per cent of the cases. It may occasionally lead to error, as in one of our cases in which a rupture of the gall-bladder occurred three months after normal function was reported on X-ray. We have used cholecystography in acute and subacute cholecystitis with no ill effects, but its use in such cases is rarely necessary. Flat roentgenograms will show stones or calcium deposits in the gall-bladder with surprising frequency and are a valuable diagnostic aid.

Blood counts and urinalyses should be done but are frequently of little value. The icteric index and Van den Bergh tests for increased bilirubin in the blood are of value in detecting early jaundice or in estimating the degree of jaundice when it is clinically present. The cholesterol level of the blood is usually high in cholecystitis but this test is not of great value. Bile salts from the duodenum which contains cholesterol crystals or calcium bilirubinate in quantities is considered by some authorities to be of considerable significance. We have found it of little value.

We seldom do liver function tests unless jaundice is present or unless there is other reason to suspect liver damage. There are no tests of great diagnostic value in detecting the minor grades of liver damage frequently seen in association with gall-bladder disease. In severe liver damage the galactose test, the bromsulphalein test, and others may be of some value in prognosis.

In the differential diagnosis of biliary tract disease, the conditions most commonly confused with an acute attack are acute appendicitis, perforated ulcer, acute pancreatitis, renal colic, diaphragmatic pleurisy, and coronary occlusion. These may usually be ruled out by available diagnostic procedures. One of the most difficult to differentiate and one in which the consequences may be most serious is coronary occlusion. It should always be thought of in middle aged or elderly individuals with acute abdominal pain. Electro-cardiography is frequently of value in the diagnosis. It must be remembered that cholecystitis and coronary disease may be present in the same individual.

Treatment: In our opinion cholecystitis is always a surgical disease and medical treatment is often a myth. Some internists are at present divided on the question of whether a low fat, low cholesterol diet with saline purgatives should be given or whether treatment should be just the opposite. Neither will give any permanent relief and the delay but serves to increase the liver damage already present.

"Silent stones" in a young or middle aged individual in good physical condition should be an indication for operation, even when symptoms are not present. Complications later in life from these so-called "silent stones" are frequent and these complications come at a time when the patient is not so well prepared to withstand surgery.

Operation: We do not consider acute cholecystitis a surgical emergency, but neither do we wait for the condition to become chronic before operation. Operation is performed as soon as the patient can be properly prepared which is ordinarily twenty-four to forty-eight hours after admission to the hospital. We believe the dangers of perforation, obstruction,

and liver damage in delay by far outweigh any slight additional risk in immediate operation. As a matter of fact, the patient in whom an acutely inflamed gall-bladder is removed usually has as smooth a convalescence as the one in whom cholecystectomy is performed in the chronic stage. In common duct obstruction, early operation is especially important. In all cases of acute biliary tract disease, we are now operating much earlier than in former years.

We use spinal anesthesia routinely for operations on the biliary tract. Pantocain 2 cc. is given at the level of the eleventh or twelfth dorsal interspace. This is combined with splanchnic block and local infiltration of the parietal peritoneum.

The gall-bladder is removed routinely where acute or chronic cholecystitis is found. We regard it an error of judgment to remove a normal-appearing, normally emptying gall-bladder because the patient's symptoms or the X-ray suggested gall-bladder disease. It is far better to close the abdomen and admit that a mistake was made. The gall-bladder, unlike the appendix, is an important physiological structure and should not be removed without justification.

The indications for exploration of the common duct have been well stated by Lahey,²

- (1) Where there is jaundice;
- (2) Where the common duct is dilated;
- (3) Where the gall-bladder is thickened and contracted;
- (4) Where the head of the pancreas is thickened, for here stones may be present at the ampulla of Vater.

We have found it necessary to explore the common duct in approximately 35 per cent of cases operated on for biliary tract disease. The exploration slightly increases the operative risk and we feel that it should not be done routinely. Before opening the duct, it should be carefully palpated by placing a finger through the foramen of Winslow. If a stone is palpated, it can be manipulated into a favorable position and a small longitudinal incision made directly over the stone. This maneuver increases the safety of opening the duct. In other cases the duct, which lies in the most lateral margin of the hepaticoduodenal fold, is identified by aspiration with a fine needle before opening. Exploration is done with a flexible bullet probe, curved forceps, or a small rubber catheter, or all three. We have never found it necessary to use a transduodenal approach for a stone impacted at the ampulla, and we feel that this

approach greatly increases the operative risk. Where the head of the pancreas is swollen, a stone at the ampulla can usually be palpated against the bullet probe and can be dislodged to a more favorable position; or it can be approached from behind the duodenum by incising the peritoneum laterally. Exploration should be extended up the hepatic ducts before closing and not infrequently one or more stones will be encountered in these branches. Following exploration of the common duct, it is always drained by a flexible T-tube. The lateral arms of the tube are trimmed to about one-half inch and the duct is snugly closed about the long arm after its insertion. The finest possible chromic suture on an atraumatic needle should be used in closure. The long arm of the tube is passed through an opening in the omentum and brought out through a stab wound in the right hypochondrium.

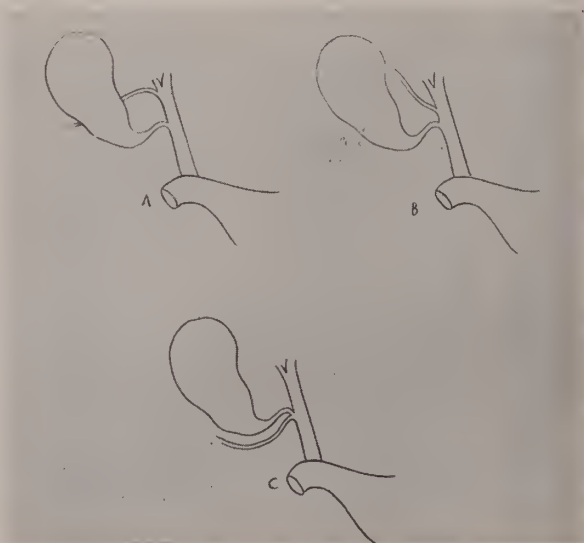


Fig. 1.—Congenital anomaly of the hepatic ducts. Ligature of the large hepatic duct "C" with the cystic duct might be fatal. (Spivack, "Surgical Technique of Abdominal Operations", S. B. Debour)

Cholecystostomy in the treatment of cholecystitis is used only where the patient's condition is too critical to warrant removal of the gall-bladder. It is rarely indicated. Common duct drainage is usually preferable to cholecystostomy in treating cholangitis and in pancreatitis.

Cholecystoduodenostomy is the procedure of choice for relief of obstruction due to carcinoma at the head of the pancreas. It is usually not a technically difficult procedure and gives temporary relief in this hopeless condition.

Drainage of the abdomen following operative procedures on the biliary tract is seldom done. A small amount of bile spilled in the peritoneal cavity apparently produces little reaction and is not an indication for drainage. On the other hand, if there is any doubt as to the security of ligatures or the possibility of small accessory ducts in the gall-bladder bed which are not ligated, it is better to drain. Anomalies of the cystic artery and hepatic ducts should always be borne in mind in any operative procedure (Figs. 1, 2, 3).

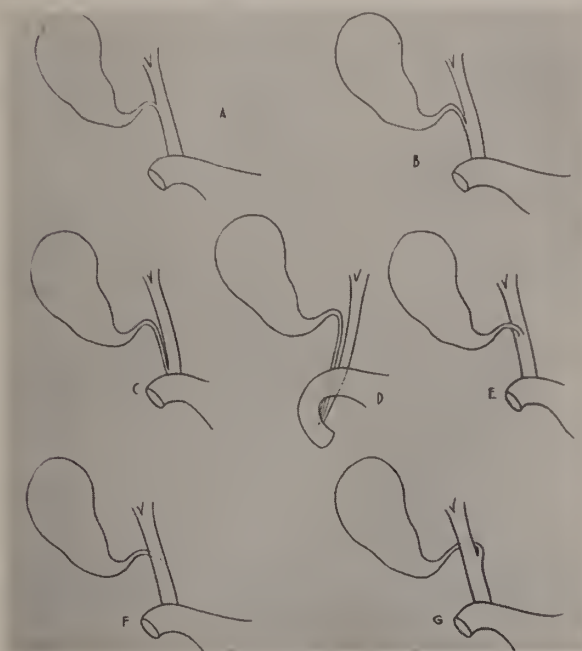


Fig. 2.—Variations in the course of the cystic duct. The cystic duct should always be dissected out and carefully exposed before ligation. (Spivack, "Surgical Technique of Abdominal Operations", S. B. Debour)

Pre- and Post-Operative Care: In gall-bladder disease, we attempt to build up the glycogen reserve of the liver with abundant glucose before operation. This, in our opinion, is the most important single step in the pre-operative care and to it in large measure we attribute the absence of any so-called "liver deaths" in our experience. Both oral and intravenous routes of administration are used. A minimum of 3000 cc. of 5 per cent glucose should be given intravenously in the twenty-four hours prior to operation. When possible the serum protein and sodium chloride levels of the blood should be determined. The amount of saline solution administered both pre- and post-operatively should be regulated by the sodium chloride levels of the blood, rather than by guesswork.

One thousand cc. of normal saline solution contains 8.5 gms. of sodium chloride. This is sufficient for a patient under ordinary conditions for a twenty-four hour period. Where vomiting is present or where continuous gastric lavage has been instituted, we have found that 10 to 15 gms. of sodium chloride may be lost in the stomach contents over a twenty-four hour period. This loss, as well as that from other sources, must be made up. A low serum protein is a definite indication for transfusion of blood or preserved plasma. Only recently has the serum protein level of the blood been given the place of importance it deserves in surgery and its significance can scarcely be over-emphasized.



Fig. 3.—Variations in the course of the cystic and hepatic arteries. (Spivack, "Surgical Technique of Abdominal Operations", S. B. Debour)

All jaundiced patients are matched for blood transfusion and are usually given 500 cc. of blood prior to operation. It should be noted that preserved blood from the refrigerator is unsuitable or at least is far inferior to fresh blood in preventing post-operative hemorrhage.

Vitamin K in combination with bile salts from both experimental and clinical evidence offers specific relief from the hemorrhagic tendency found in jaundiced patients. Vitamin K is normally present in the diet in abundance but its absorption from the intestinal tract is prevented by absence of the bile salts. It is a necessary factor in maintaining the normal prothrombin level of the blood and prothrom-

bin is an essential factor in the clotting process. The most potent available form of Vitamin K known is 2-methyl-1, 4-naphthoquinone and represents one of the very few instances of a synthetic product more



Fig. 4.—T-tube in the common duct and an enterostomy tube in the upper jejunum for return of bile to the intestinal tract. This is desirable where very prolonged drainage is anticipated as in this case. Note that the pancreatic ducts are filled by the contrast media. The solution also passes readily into the duodenum.

potent than the natural one. It may be administered orally or intramuscularly in corn oil.

Following operation, at least 3000 cc. of 5 per cent glucose is given intravenously each twenty-four

hours. One thousand cc. or more of this is given in normal saline. Morphine or dilaudid is used for relief of post-operative pain sometimes combined with atropine or syntropan. All patients are turned frequently from the time they are returned to bed. Continuous gastric lavage is used for gastric distention and for nausea or vomiting but is seldom necessary. Prostigmin 1/4000 is used every four hours in an occasional case to prevent or control abdominal distention. Fluids by mouth are given the day of operation and food as soon as it can be tolerated, especially carbohydrates and protein.

A T-tube is never removed from the common duct until the character of bile approaches normal. The minimum is two weeks following operation but usually it is six to ten weeks or even more. X-rays are always made to demonstrate patency of the ducts before removing the tube and to eliminate the possibility of an overlooked stone. Where prolonged drainage is carried out, the bile is returned to the intestinal tract through a stomach or enterostomy tube (Fig. 4). The biliary fistula usually closes in twenty-four hours after the removal of the T-tube. We have never known a stricture to develop from its use.

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THE PATCH TUBERCULIN TEST— A Study on Ninety-Six Cases.*

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The object of this paper is to review the literature pertaining to the tuberculin patch† test described by Vollmer and Goldberger in 1937, and to present the results obtained when the patch and Mantoux tests were performed simultaneously on ninety-six children.

METHOD

The testing material or patch consists of a thin filter paper saturated with undiluted tuberculin pre-

duced from a synthetic medium. This is dried and cut into one cm. squares and placed on adhesive tape 2.5 by 7.5 cm. Each adhesive strip contains two of such patches on each side of a center control filter paper saturated with glycerin broth. Crinolen is used to protect the adhesive side.

The patch is applied on a hairless skin area such as over the sternum, inner side of the forearm, or upper part of the spine. The cutaneous region is cleansed with acetone, the patch carefully applied, and the adhesive sealed. This is left on for forty-

*Read before the Roanoke Academy of Medicine.

†Material supplied by Lederle Laboratories, Inc.

eight hours, during which time bathing is forbidden. The test is read forty-eight hours after removal of the patch to allow the reaction due to the adhesive to disappear and that due to the patch to intensify. A positive reaction appears as "a sharply defined, indurated, reddened square with lichenoid, follicular elevations on the skin". The intensity of reaction varies from a slight follicular elevation and redness to a spread of reaction beyond the square with blister formation.

REVIEW OF LITERATURE

Vollmer and Goldberger first studied the patch test in relation to the Pirquet test. There was conformity between the two tests in 187 or 89.5 per cent of their series. Of the twenty-two non-conforming cases, seven were negative with the patch test and positive with the Pirquet test, whereas the reverse was found in fifteen cases.

The same authors found the patch test to be more sensitive than the Mantoux test, using first strength P.P.D. and 0.1 mg. old tuberculin when the two tests were performed on 535 children admitted to the Mount Sinai Hospital and 130 tubercular children at the Sea View Hospital. Conformity between the patch and Mantoux tests, using 1 mg. old tuberculin and second strength P.P.D., was almost 100 per cent.

Steward found the patch test to be more sensitive than the Mantoux test, using 1:1000 dilution of old tuberculin in ninety-six cases. The results reported by Hughes show the patch test superior to the intradermal with first strength P.P.D. in 100 cases, but not as sensitive when second strength P.P.D. was used. Both of these authors comment on the ease of administration of the patch test and the absence of

constitutional reactions in patients upon whom the test was performed. Hughes pointed out that a positive reaction with second strength P.P.D. was always mild when the patch test was previously negative,



Fig. 1.—Positive reaction using the patch tuberculin test.

whereas the reaction was often severe with necrosis, lymphangitis, and axillary adenitis when the Mantoux with first strength P.P.D. was formerly negative. This is due to the fact that the difference in sensitivity between the patch and Mantoux tests,

TABLE I

AUTHOR	NO. OF CASES	CON-FORMITY	NON-CON-FORMITY	PATCH MANTAUX	PATCH MANTAUX	REMARKS
Steward	96	93.75%	6.25%	0	6.25%	1:1000 O.T.
Vollmer & Goldberger	417	413	4	0	1	0.1 mg. O.T. 1 case each of: Patch Mantoux
Vollmer & Goldberger	251	249	2	1	1	P.P.D. 1st & 2nd strength and 1 mg. O.T. used.
Hughes	100	89	11	0	11	P.P.D. I used. All 11 positive with P.P.D. II.
Peck & Wegman	319	246	73	55	18	P.P.D. I used. All positive with P.P.D. 2nd strength. 880 chil- dren used.

using second strength P.P.D., is much less than that between the intradermal tests with first strength and second strength P. P. D. Taylor reported that the patch test is more sensitive than the Mantoux test with 1:1000 old tuberculin in young adults and less sensitive in persons over fifty years of age.

Peck and Wegman found the patch test unsatisfactory after comparing it with the Mantoux test, using purified protein derivative first and second strength in 880 children. They concluded that "a negative patch test does not by any means eliminate the possibility of a positive reaction to tuberculin and that the patch test alone is unsuitable as a screening method for finding the reactors in a school population."

PERSONAL EXPERIENCE

Ninety-six children between six months and seventeen years of age were tested simultaneously with the patch and Mantoux test, using a 1:5000 dilution of old tuberculin. The patch was applied over the sternum in all but the first eight cases when it was applied over the inner surface of the upper forearm. The dilution of old tuberculin used in this series is that used routinely to find positive reactors in the city of Roanoke. Approximately fifteen of the children had previously reacted positively to the Mantoux test. The remainder were new cases having either a questionable or definite tuberculous contact. In reading the tests, a few lichenoid effervescences with the faintest erythema in one patch was considered suspiciously positive.

Of the ninety-six cases, the results of both tests coincided in 74 or 77.08 per cent of the cases, but did not in 22 or 22.92 per cent (see Table II).

TABLE II

	CASES	PERCENTAGE
Conformity	74	77.08
Non-conformity	22	22.92

Table III gives a further analysis of the results. Twenty-nine cases reacted positively to both tests and the results were negative with both in forty-five cases. We were unable to have negative reactors return for retesting with a stronger dilution of old tuberculin. Three children showed a positive intradermal reaction and a negative patch. Of eighteen cases reacting negatively to the Mantoux test, nine

were positive with the patch test and nine were suspiciously positive. We were able to retest six of the latter nine with a 1:50 dilution of old tuberculin and four showed a definite positive reaction.

TABLE III

CASES	MANTOUX TEST; 0.02 MG. O.T.	PATCH TEST
29	+	+
45	—	—
9	—	+
9	—	±
1	±	+
3	+	—
Total 96		

One case negative to both tests but two months later reacted positively to patch and 2 mg. O.T.

These results show that the patch test is definitely superior to the intradermal test using a 1:5000 dilution of old tuberculin as a testing material. This dilution is not sensitive or strong enough to find tuberculin reactors in a community. This latter point is further borne out by the fact that several of the children giving a definitely negative test with the intradermal test, but positive with the patch test were found, when X-rayed, to have childhood tuberculosis. Two of these children had to be placed in a sanatorium. These figures gain greater values when one realizes that this is a small series of ninety-six children.

Of the three cases showing a negative patch and a positive Mantoux test, one was not read until 120 hours after removal of the patch and another was placed on the inner side of the arm instead of over the sternum. Only one of these cases was X-rayed and there was no evidence of clinical tuberculosis.

There are other advantages of the patch test over the intradermal. There is no necessity for hurting a child with a needle. This was emphasized by the quietness prevailing when the patch was applied and the crying when the Mantoux test was done. In one of the cases not reported, the mother refused to "let her child be stuck" for the Mantoux test, but offered no objection to the patch test. The patch test is much easier and simpler to perform than the Mantoux test. Although the constitutional reactions resulting from the two tests were not studied in this series, previous studies failed to find any with the patch test. The only disadvantage was the fact that the patch, on

several occasions, was removed before forty-eight hours.

The patch test should enable the physician doing rural practice to test children he would be unable to do with the Mantoux test. He can keep a few patches in his bag since it is not necessary to keep them on ice, and the test can be done at any time he should visit a patient.

CONCLUSIONS

1. The patch test proved to be superior to the Mantoux test, using 1:5000 dilution of old tuberculin in finding tuberculin reactors in a series of ninety-six children between the ages of six months and seventeen years.

2. The patch test alone should not take the place of serial tuberculin testing. Whenever it is possible, especially in hospital cases and diagnostic clinics, the patch test can be done first, but this should be followed by a Mantoux test, using at least 1 mg. of old tuberculin or second strength P.P.D. Even in mass tuberculin testing, a child showing a slight fol-

licular elevation and the faintest erythema under one of the patches should be retested with a strong dilution of old tuberculin or second strength P.P.D.

I wish to express appreciation to Miss Florence Deyerle of the Health Department of the City of Roanoke for her cooperation and aid.

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SULFANILAMIDE IN THE TREATMENT OF ACUTE MASTOIDITIS.

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So voluble is the literature concerning sulfanilamide therapy it would seem amiss to attempt any comprehensive digest in this paper. Suffice it to say that acute middle ear suppuration and early acute mastoiditis are not nearly the problem they were six or seven years ago.

In a limited experience we have found in scores of cases of acute otitis media, where more conservative methods of treatment had failed, that early paracentesis of the ear drum plus sulfanilamide therapy resulted in prompt and dramatic cure.

However, during the past eighteen months, we have had four cases, two children and two adults, who had developed acute mastoiditis before or during the course of the above treatment. Of these, only one, a girl eighteen years of age, came to operation (simple mastoidectomy), after which uneventful recovery promptly occurred.

Before turning to our brief case reports I wish to call your attention to a few interesting observations of authoritative source. The Johns Hopkins group

who pioneered the use of sulfanilamide in the United States has pointed out that sulfanilamide and its derivatives should not be used to the exclusion of supplementary methods of treatment¹. Adequate diet, vitamin intake, preservation of a normal electrolyte pattern in the blood, and the use of surgical procedures, where necessary, demand careful consideration for best results. For a resumé of conditions under which it is *imperative* to stop the drug, or *advisable* to stop it, or where it may be *maintained* despite certain toxic reactions, one is referred to the report of the Hopkins group. Of course, blood determinations and urinalyses in addition to bedside observations are of prime importance where sulfanilamide therapy has been instituted.

As a refinement, it is also shown that in the treatment of otitis media and acute mastoiditis of pneumococcal etiology sulfapyridine is far more effective than sulfanilamide; whereas, in the same infections of hemolytic streptococcal origin the reverse is true. Neoprontosil is not recommended in either case.

Alpert and Forbes² stress the importance of prolonged sulfanilamide therapy in streptococcal infections, such as otitis media, cervical adenitis, sinusitis and mastoiditis if relapses are not to be anticipated. It was noted that relapses occurred in about 7 per cent of 200 cases of children treated with sulfanilamide.

"Disappointments" in the use of the drug were reported by Charles T. St.Clair, Sr.,³ attributable to not keeping up the treatment an adequate length of time. Continuance of sulfanilamide one or two weeks after the subsidence of symptoms seems indicated.

David Davis, agreeing that sulfanilamide and its derivatives have cut down the number of mastoidectomies which the average otolaryngologist is called upon to perform, is of the opinion that⁴ sometimes the drug has a masking effect on early mastoiditis and that subsequent operation may be necessary. However, in this connection, Horan and French, reporting 621 cases of acute suppurative otitis media treated with sulfanilamide, state that⁵ "no observations suggested that sulfanilamide predisposed toward the encysting of infection and the consequent formation of a chronic otitis, in which condition the drug has no value".

REPORT OF CASES

The first patient, an eighteen-year-old girl, complained of acute coryza and intermittent left earache for four days. Examination showed the left eardrum hyperemic and bulging. Myringotomy was performed and bichloride of mercury 1/5000 irrigations prescribed. Two days later the patient returned to the office complaining of neuralgic pain about the left ear. Her temperature was 100.5. She was immediately hospitalized and placed on sulfanilamide medication. Following the classical symptoms and signs of early acute mastoiditis, an X-ray four days later showed definite mastoid involvement. Another two days ushered in a temperature of 101 with chills and pain localized to the left zygomatic region and mastoid tip. The W.B.C. was 12,000. A simple mastoidectomy, left, was performed, and in addition to the usual findings, a small extra-dural abscess was found in the zygomatic area. Sulfanilamide therapy was continued postoperatively; course and recovery were uneventful.

The other three cases under routine treatment plus sulfanilamide recovered without the necessity of mastoid operations.

The second patient, a ten-year-old girl, complained of a profusely discharging left ear for three days. Examination revealed little or no mastoid tenderness. Sulfanilamide and bichloride of mercury 1/5000 irrigations were prescribed, but there was little abatement of the mucopurulent discharge. At this time an X-ray examination showed a definite mastoiditis. There being few important symptoms this girl was treated as an out-patient. After about seven weeks of sulfanilamide therapy she was discharged completely cured. A re-growth of adenoid tissue subsequently was removed and the patient now has enjoyed excellent health for several months.

The third patient was a three-year-old boy. He complained of fever, chills, and swelling in the region of the right zygoma and back of the ear, of two days' duration. (There had been a discharge, it was reported, intermittent, and at times somewhat foul, from this ear for two years.) Findings were typical of a zygomatic acute mastoiditis, right, possibly an acute exacerbation of a chronic process. On admission the patient's temperature was 100.5, W.B.C. 13,350, and X-ray showed a definite mastoiditis, right. Sulfanilamide and routine treatment were instituted, the circum-aural swelling and mucopurulent discharge subsided rapidly and the patient was permitted to leave the hospital cured in six days' time. (Several months later a report through relatives indicated that the child had had no further trouble with his ear).

The fourth patient, a forty-five year old woman, was admitted to the hospital complaining of a painful left ear which had spontaneously begun to discharge seropurulent matter two days previously. There had been considerable pain and examination revealed definite mastoid tip tenderness. Her temperature was 100.2, W.B.C. 5,300, rising two days later to 6,800. An X-ray of the left mastoid showed a haziness consistent with acute mastoiditis. Routine plus sulfanilamide treatment was instituted and the patient was discharged from the hospital practically recovered after nine days. The ear was reported completely dry in another week.

While these case reports are too few to be of much statistical importance, yet they do in a small way supplement hundreds of others reported in the literature indicating the dramatic effectiveness of sulfanilamide and its derivatives in the treatment of acute middle ear and mastoid infections.

In conclusion, I wish to stress the importance of certain considerations.

(1) Properly controlled sulfanilamide medication is indicated in acute middle ear infections and mastoiditis.

(2) Supplementary methods of treatment, including surgery, should demand due consideration.

(3) Sulfanilamide therapy is most effective in the streptococcal infections while sulfapyridine is to be preferred in infections of pneumococcal origin.

(4) Prolonged use of these drugs is recommended in acute ear conditions if relapses are to be avoided.

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DYSMENORRHEA-LIKE EPISODES IN A PATIENT WITH CONGENITAL ABSENCE OF THE UTERUS.

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The cause of painful menstruation is usually thought to arise from dysfunction of the uterine musculature. The causes of this dysfunction, as commonly given in the literature, are legion. We have been told, for example, of stenosis of the cervix; of deficient elasticity of the uterine wall; of hyperesthesia from nutritional disturbances; and, of course, of the effect of endocrine imbalance causing abnormal spasmodic contractions of the uterus. In addition, it is occasionally admitted that some patients may have pain of ovarian origin. The following case may be food for thought for those who consider dysmenorrhea and uterine dysfunction as practically synonymous.

M. D., a sixteen-year-old female inmate of an orphanage was first seen in September, 1936. At this time she complained of severe drawing pains in both lower quadrants of the abdomen lasting three to four days and occurring periodically for the preceding four months. Associated with the above complaint she experienced headaches and general malaise. Symptoms at times were so distressing that the patient was confined to bed. There had been no menstrual bleeding. The remainder of her history was entirely irrelevant.

Examination revealed a very cooperative, moderately alert girl, a little short in stature. Her

breasts were well developed; axillary and pubic hair distribution was normal. Her genital labia were normal but no hymenal opening was seen or felt. On rectal examination it was found that the intact hymen, or what should have been a hymen, could be pouched out. No cervix or uterus could be palpated but it was thought that the right ovary was felt. A cleft uvula was the only other abnormal physical finding. Tentative diagnoses were (1) imperforate hymen and (2) possible congenital absence of cervix, uterus and vagina.

Four months later the above findings were re-established and corroborated by consultation, and the discussion resulted in a decision to perforate the patient's hymen and explore her perineum for a vagina and cervix. This was done in June, 1937, under local anesthesia, and no vaginal cavity was found. The extent of exploration was limited only by fear of entrance into the peritoneal cavity.

The patient returned to the orphanage where her usual monthly seizures of lower abdominal pains persisted. Partly because of pressure by the patient and her family, and partly because of the possibility that a uterus might be present and a hematometra might exist, in August, 1937 an exploratory laparotomy was performed.

A normal peritoneal cavity was encountered, in

the pelvic portion of which *no* uterus or tubes were found. Round ligaments, which ran a normal course until they approached each other in the midline, were easily identified. About four inches from their respective internal inguinal rings these ligaments presented a bulbous enlargement the size of a large olive and then merely thinned to eventual invisibility. These two bulbs were removed and were reported, histologically, to be composed of normal appearing smooth muscle resembling that of the uterus but containing no cavity. The ovaries appeared normal except for slight enlargement of the right ovary.

Actuated by the memory of the intimate embryologic relationship between the urinary and genital tracts, exploration was made and an absence of the left kidney and ureter was found. No other intra-abdominal anomalies were encountered. Post-operatively, intravenous urography showed the well outlined right kidney to be hypertrophied, and an absence of dye on the left side.

Operation was followed by an essentially benign course and our patient was completely relieved of her cyclical symptoms until November, 1937, three months after operation. Since this date these symptoms have reappeared every twenty-eight to twenty-nine days. These seizures are just as severe as the ones she had pre-operatively and of the same character. The pain starts in either lower quadrant, more often the right, and spreads over the abdomen and down the thighs.

Here, then, we have a patient with a symptom complex which would spell dysmenorrhea, except for the absence of uterine bleeding. We have rather definitely discarded the fact that she might consciously or unconsciously be trying to "resemble other girls", since she was ignorant of the fact she had any missing genitalia until she was seventeen and had had fifteen months of "dysmenorrhea". Also, her attacks caused her to miss many pleasurable occasions which she ordinarily enjoys tremendously. We firmly believe that these pains are not of psychic origin but admit our inability to prove this point.

Neurologic examination was negative, and rectal examinations before, during, and after an attack have failed to show any edema or engorgement of the rectal mucosa.

Another possibility which suggested itself was that this pain might be due to exaggerated pain of

ovulation. Consequently, to determine the relation of this pain to ovulation, we assayed the daily urinary gonadotropin excretion on the assumption that the appearance of this hormone is an index of ovulation. The technic involved the concentration with alcohol of an entire first morning specimen of urine to 9 cc., and its injection twice daily into a twenty-one-day-old female rat, for nine injections. The uterus and ovaries were weighed the sixth day after the first injection.^{1, 2}

The urine was run daily for one month. During this time she had two attacks of pain close together, which was unusual, although it had occurred before. The first was of two days' duration beginning nine days after starting the assays. Five days after the first attack ended, a three-day period occurred. The assays were stopped eleven days after the second period ended. Another series was run two months later, starting with the onset of the period, and continuing for fifteen days. The results indicate that the patient did not have appreciable amounts of gonadotropin in her urine at any time, so that we were unable to determine when ovulation occurred. One may wonder whether the absence of the uterus might perchance be responsible for this.

In an attempt to determine if inhibition of ovulation might relieve the pain we next tried to inhibit the gonadotropic activity of the pituitary by the administration of testosterone propionate. We gave three 25 mg. intramuscular injections of testosterone* per week, for three consecutive weeks, starting three days after her last period of pain. Due to a misunderstanding, the drug was discontinued with the ninth injection. Her pain period came eight days later and was of normal intensity and duration. Since then the pain periods have continued unchanged. The patient refused further therapy. This shred of evidence would tend to further refute the idea that this pain is connected with ovulation, since this course of androgenic therapy should have been adequate to inhibit ovulation for one period.

Our final attempt to determine the time of ovulation was by having the patient take her rectal temperature daily, on awakening, on the basis that the rectal temperature is said to drop distinctly at the time of ovulation.³ Unfortunately, the subject showed a notable lack of enthusiasm for this procedure, and the results were worthless.

*We are indebted to Dr. W. R. Bond, of Schering Corp., for supplying us with Oreton.

SUMMARY

A female with congenital absence of uterus and vagina exhibits severe dysmenorrhea-like symptoms monthly. Attempts to correlate the pain with ovulation, by assaying the gonadotropin excretion, and by testosterone therapy, have failed.

ACKNOWLEDGEMENTS: We are indebted to Drs. W. P. Barnes, Louise Galvin, and Gayle Crutchfield for their consultation.

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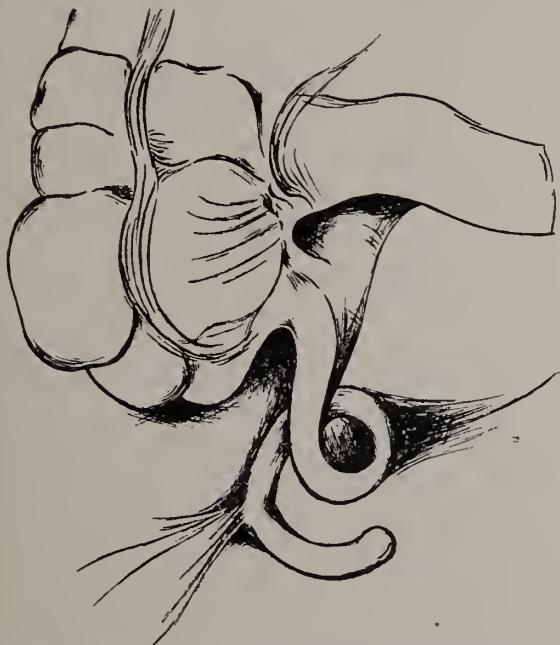
THE MECHANICAL FACTORS IN APPENDICEAL PATHOLOGY AS FOUND *IN SITU*.

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My attention was definitely arrested about three years ago, when I operated upon a child who had been referred to me by a competent pediatrician with a tentative diagnosis of chronic appendicitis and a request for an appendectomy. She had never been quite well, had failed to develop normally, had repeated digestive upsets, with abdominal discomfort, nausea, at times emesis. Constipation was usual. During these repeated attacks, she would show an

increase in pulse rate, but rarely a significant rise of temperature. Ultimately she would develop tenderness on pressure in cecal region without spasticity. There were no definite blood changes reported.

Upon opening the peritoneum, the clubbed tip of the appendix presented. Immediately below were seen two complete coils, one above the other. Further investigation *in situ* revealed a short meso-appendix and two inverted triangular bundles of



*Fig. 1. Shows a coil at the point where a constriction prevents the emptying of the appendix.

*The drawings represent four types of external obstructing factors. These are quite typical. There are many other types of variations and degree. The point that I want to impress is that the extrinsic factors create and are frequently responsible for the intrinsic pathology.

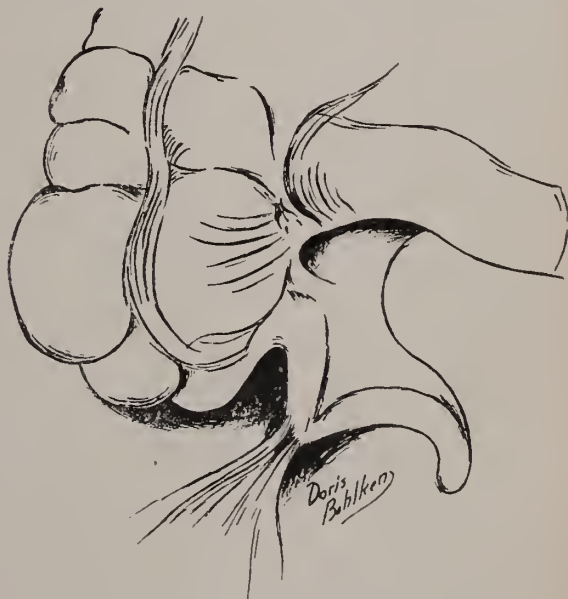


Fig. 2. Shows an angulation.

peritoneum attached at different levels, the mechanics of the three being such as to create tension and counter-tension with resultant mild obstructive changes. The picture presented was that of a coiled snake ready to strike. Following its removal, the

child has been well and since has developed normally.

By the mechanical factors in appendicular pathology, I am referring to (1) the extra-appendicular factors, (2) the intra-appendicular factors observed *in situ*, which are capable of and do produce changes in the size, shape and location of the appendix. These factors produce obstructive pathology, one or several, to the canal, blood or nerve supply, of varying degree, ranging from mild to severe, depending upon the degree of deformity in a given appendix.

The factors may be grouped into (1) congenital, and (2) acquired. They consist of folds, bands, bundles, veils, anomalies of the meso-appendix and adhesions.

It is my feeling after reviewing many cases that the extra-appendicular factors, when considered individually and collectively, are commonly primarily responsible for many of the intra-appendicular lesions, which are the result of incomplete to complete obstructive changes.

With the intra-appendicular factors, we are all quite familiar. They consist of foreign bodies, such as fecoliths, bone, parasites, shot (in game devotees) and the like.

The extra-appendicular factors vary in size, shape, consistency and location. There may be and frequently are found one or more of these factors in an individual case. The shape, size, consistency, number, point of attachment and area of attachment, each plays its particular role in producing mechanical obstructive changes. The appendices thus involved may, and do reveal any one or combination of changes in the shape, size and relation of the appendix, depending on area of pull and counter-pull. The degree of pull and counter-pull determines the degree and type of obstructive deformity in a given appendix.

The area, type and location of attachment has its role in the production of a given type of deformity. The apex of a triangular bundle when attached to the appendix produces a sharper angulation than when the base of the factor is attached. A bundle of peritoneum which divides into a "Y" near the appendicular attachment frequently produces a longitudinal rotation. The peritoneal bundles are usually congenital. The bands may be either congenital or acquired. The bands are usually of a firmer structure and, therefore, produce direct obstructive changes at the point where they cross the appendix. The veils

are probably due to a previous mild inflammatory reaction. The veils are thin (until firmly organized) and usually produce less severe types of pathology. When organized they produce increased degrees of pathology. This depends upon the degree of tension directly applied over a given area or point.

All combinations of factors have a part in producing deformities of varied characteristics.

The early diagnosis of these milder cases of mechanical appendicular pathology is rarely clear, and frequently has to await the advancing recurrent attacks of increased severity and more definite symptoms and other clinical findings.

The milder types rarely reveal anything very definite of diagnostic value, but we should keep in mind the most frequent possibility—the appendix. The symptoms in the milder cases are those of abdominal discomfort in the umbilical or epigastric regions, anorexia and recurrent digestive upset. Nausea is

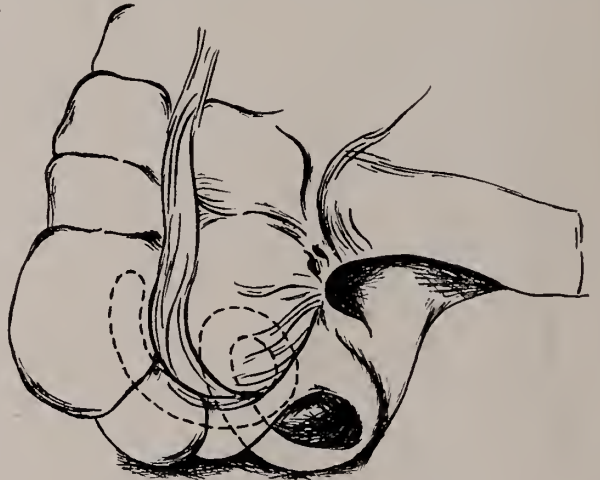


Fig. 3. Shows a longitudinal rotation.

common. Emesis is less common. Constipation is quite usual. There is frequently no rise or only slight rise of temperature. The pulse rate is usually increased during these upsets. This is an important finding. There is rarely an early increase in the total leucocyte count, but there may be a slight increase in the polymorphonuclears after a few hours. The small lymphocytes show an early and marked increase. There is tenderness over the appendix on pressure. The point of maximum tenderness varies with the location of the appendix. The patient frequently can place a finger over the most tender point.

In the retrocecal cases, this is quite important. The palpation should be made between fingers of

both hands, placing one over lower right abdomen and the other over the loin.

The mild symptoms may subside, to be followed by recurrent attacks, or the mild may progress to the more severe types with a more completely oriented syndrome.

It is very important to suspect and recognize the mild cases and treat them by prompt surgery before the advanced changes supersede the mild.

The pathological changes in the appendix, resulting from one or more factors, vary in degree from the very obscure and indefinite to the increasingly advanced severe types.

The pathology producing symptoms in the incomplete deformities are indefinite and vague, but the discomfort increases with each recurring attack, at

It is very interesting and instructive, with good exposure, to take an extra minute for investigation before lifting the appendix from its bed.

We are all familiar with the pathology found in appendices, which is the result of its contiguity to some adjacent inflamed structure, as in salpingitis.

There is a very low operative mortality in the simple cases; as a matter of fact, there should be none, barring accidents. I am always being reminded of a remark made by one of the older surgeons, now dead—"The time to remove an appendix is when the diagnosis is reasonably made, if not before."

Rarely, now, is there great difficulty in convincing the patient or the family of the importance of prompt surgery. Of course, we will probably have to contend with castor oil and ice bags for a while yet.

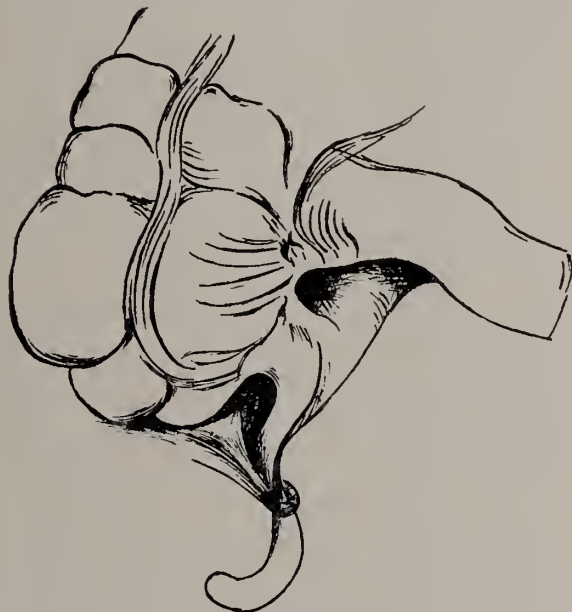


Fig. 4. Shows a retrocecal type with a kink proximal to the cecoappendix.

times suddenly. The diagnostic picture is one of degree. The degree depends upon the stage and degree of obstructive changes. The obstructive changes are in direct relation to the deformity produced by the factors found in a given case. The most common findings are angulation and longitudinal rotation.

The roaming appendix may be found in any location within reach, unattached or attached to any contiguous structure. I have seen two obstructing the bowel in the left abdomen.

It is easy to overlook the mechanical factors when one fails to inspect and palpate the appendix *in situ*.

SYNOPSIS

	PER CENT
Average age at operation	27.4
Prior to twenty-five years	48 plus
Previous history of attacks	75
No previous history of attacks	25
Average temperature on admission	99.6
Average pulse rate on admission	92
Average white blood count on admission.....	9,540
Average polymorphonuclear count on admission.....	74.4
Average lymphocyte count on admission.....	25.6
Tentative diagnosis:	
Acute appendicitis	40
Recurrent-chronic	48
Sub-acute	4
Routine	8
Pathological report:	
Acute	25
Sub-acute	12
Acute suppurative	7
Chronic	43
Gangrenous	3
Sclerosis	8
Findings at operation:	
Acute	17
Walled off abscess	1
Localized peritonitis	1
Perforation	4
Sclerosed	2
Adherent to cecum	3
Coiled	5
Longitudinal rotation	8
Retrocecal	8
Angulations (one or more)	39
Swollen and obstructed	18
Parasites	2
Concretions	6

These findings, roughly, may include two or more of different findings in a given case.

CONCLUSIONS

1. The appendix when examined *in situ* may, and frequently does, reveal mechanical factors which are responsible for changes in size, shape and location of the appendix.

2. The pathological changes in the appendix resulting from the mechanical factors are obstructive. These obstructive changes are of variable degree, from mild to the destructive processes.

3. The obstructive changes involve the lumen, circulation and nerve supply, one or all.

4. The factors consist of bundles, bands, veils, adhesions, and anomalies of the meso-appendix.

5. The obstructive changes include angulations, coils, longitudinal rotations and misplacements. Any combination of these may exist.

6. The number, the variety, the shape, the area and the location of attachment to the appendix with the resulting pull and counter-pull, any or all, are responsible for the obstructive changes.

7. The degree of pathology found depends upon the tension and counter-tension; the direct pressure; the area of application; the location, and a number of other factors.

8. Many intra-appendicular obstructions are pri-

marily the result of extra-appendicular factors.

9. In the mild cases, when the appendix is removed and examined microscopically, little or nothing of an inflammatory character is revealed.

10. One should not be annoyed because of this, when he has found the mechanical factors *in situ*.

11. The degree of pathology is progressive and recurrent; mild today, later more severe, and finally destructive. The early picture is one of digestive upsets, pain, nausea, vomiting, constipation (the rule), anorexia, tenderness over location of appendix, rise in pulse rate, rarely a temperature elevation or very significant changes in blood count. If carefully checked and repeated it is commonly noted that the lymphocytes are increased.

12. To avoid catastrophies, *suspect the appendix*, and make every effort to eliminate other causes. But remember that appendiceal pathology may exist without the complete text-book syndrome; for the latter is never present *in toto* in the early stages in the mechanical types.

It is far better to "remove the appendix as soon as a reasonable diagnosis is made, if not before." To delay surgery is to invite morbidity and mortality.

215 Medical Arts Building.

THE CHILD VERSUS THE ADULT.*

E. H. WILLIAMS, M.D.,
Westbrook, Sanatorium,
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I have been asked to bring you the subject of "Teaching the Child to Live with Adults". The subject struck a most responsive chord within me and I am grateful for the opportunity to be with you. Keenly do I feel about it, for such a topic could not be more diametrically opposed to my innate scientific beliefs. What is there to recommend it? Why should we choose to "teach children to live with adults"? The answer is found in our own condescending, superior, egotistical attitude which we all assume in dealing with the child.

Far better it is if we turn around our subject and our attitude and "teach adults to live with the child". We would be unselfish about the matter, to say the least. Is it not the child about whom we are concerned? Is there any other one thing in the

world which so displays our stupidity and our ignorance as does the child? Constantly is he bringing problems and putting questions which we are inadequate to meet in a sensible and logical manner. We can change our attitude toward the child with more profit to ourselves than if the child make that same adjustment. When a little child comes into this world of ours, he is fresh from the hands of God and is innately more sound and perfect than any of us adults. He is full of potentialities and capacities, and the whole span of life stretches before him. Our adult interest should be to encourage him to develop himself in a perfectly normal manner. We should allow him free expression of himself and not try to inflict upon him our own opinions. After all, it is his life, breathed into him by the Deity, and not ours, even though he be our own child. We should try to guide him, to lead him—not to force

*Read by invitation to the Parent-Teacher Association, Robert E. Lee School, Richmond, Va.

him or to shackle him with our ideas and our ideals. In every sense of the word, he is an individual and is due the same patient consideration and understanding which we adult individuals reserve for ourselves. The child is natural and seeks to express himself along instinctive developmental lines. We are unnatural, changed and modified by every influence which we have experienced since birth and so it is that we have acquired a shell, a veneer, and, in a sense, do not speak even the same language as does the child. Here lies the difficulty and, until we perceive this truth, there can be no understanding on the part of either one.

The greatest need of every child is to be left alone more, to be allowed to express himself more freely and to profit by his own mistakes. Unfortunately, some of us still believe that we can teach others how to live life. I doubt seriously that anyone can be taught anything in the strictest sense of that word. He must learn for himself. And yet, we adults, in our conceit and self-confidence, are forever seeking to mould the lives of our children. True, it is that "Fools rush in where angels fear to tread". Children are told "to do this" and "not to do that", often without even a semblance of explanation. Our opinions are being constantly forced upon them and they are required to respect them. If the situation were reversed, and the opinions of others were forced on us, we would rise up in righteous indignation and refuse. If our children do this, they get a spanking for their trouble. It is far more important that the child learn to formulate his own opinions which he can both understand and respect. Someone has said that our children and our dogs know us far better than we know ourselves. This is undoubtedly true, for they are alert and surprisingly discerning. In my daily work, patients constantly call forth to me memories from their childhood which would embarrass their parents very considerably if they could but know. The child influences his environment and is in turn influenced by it. Family discords of one kind or another help to shape his future thought processes, and economic troubles, household business discussions, parental worry, marital difficulties, in fact, the whole home atmosphere, finds him responding in like emotional status.

There is usually a motive in our attitude toward the child, of which we are totally unaware. In his growth and development, we are subconsciously re-

mindful of a similar period in our own lives and of our successes and our failures. The latter pain us and our attitude and solicitation of the child is but a projection into his life of the second chance we all crave in an attempt to better our first effort. Truly, we try to live again our own lives in those of our children.

Every human being has the inalienable right to a happy childhood. When we grow old, we have little else to comfort and sustain us but our memories. What is it that destroys or robs one of his happiness? The answer is "Fear". Fear is the most damnable and destructive force in the universe. Fear is mankind's greatest enemy and the secret behind the power of everything symbolic of the devil. It is with us from the cradle to the grave, and holds us in its unhappy grip. Shame, inferiority, anxiety, apprehension, worry, uncertainty, disappointment, anger, humiliation, and discontent are all emotional variations and gradations of that hellish state we call "fear". In my opinion, fear is an unnatural state. It is not a normal emotion. It is instilled into us and thus is acquired. The child is born devoid of fear, so far as science can determine. Certainly we find in the lower animals no evidence of fear in the very young. Unfortunately, early in life we become touched by it and forever thereafter, we are subject to its destructive force. The seeds of most fears are sown in the child's mind during the first six or seven years of its life. Wise is the parent and fortunate is the child who can have the luxury of an atmosphere devoid of fear. In their over-solicitous and over-conscientious attitude, many a parent commits the worse possible approach. A happier childhood results where the child can be left alone, relatively, and allowed to "paddle his own canoe". What is sorely needed in most parents is a more fatalistic or "oriental" attitude about their children. Then, in their anxiety to be helpful, they would be slower and more conservative in interrupting the normal course of child development. Words and tones are often more potent than whippings. They carry great force and consequences in the susceptible person's mind. I have known of many cases where a single word carried such ominous significance as to temporarily wreck the peace of mind of a previously happy person. The child is nothing if not susceptible to all the influences of his environment and the word "don't" has caused

more unhappiness than any other in the English language. Children have it fed to them for breakfast, dinner and supper, and in between meals for good measure. Did you ever yourself analyze how unattractive that word is? "Don't" is a word of negative implication and is irritating to all thinking people in itself. It is negativistic and destructive in its entirety and contrary to the very principle of life, which is positive and constructive. The "don'ts" inflicted on children daily are qualitatively familiar to us all, but I doubt if any of us realize the number of them *ad infinitum*. Is it any wonder then that little children become confused and uncertain of just what is expected of them?

Thus the child finds himself in conflict with his instincts and emotions on the inside and the ideas and ideals of the adult on the outside. This leads him to hold in or repress his normal emotions and causes him to become timid, tense, uncertain. And so he lays down a reaction pattern which is abnormal in itself and, under stress and strain of circumstances in adult life, these fundamental or foundation methods of reacting come to the forefront, leading to what we term "nervous disorders". Once fear is acquired, it is even more harmful when it is not freely expressed and manifested, for the emotional force involved is more devastating than any of the forces which the external world can bring upon the person. This internal struggle is more malignant to the peace of mind than cancer is to the physical body. The animals lower than man are more natural than he, for they express their fears freely. While it is essential to understand "fear" in general and how it influences the child, we cannot eliminate fear without first knowing its cause. Are we afraid of things with which we are familiar? Or is it the unfamiliar which makes us uncertain and ill at ease. Unquestionably ignorance is the cause of fear. Unquestionably knowledge and truth constitute its cure.

We have a definite duty to the child. We should accord his thoughts and feelings the same measure of respect which we demand for our own. We should honor his convictions and encourage him to develop himself. We should help him to develop his own individuality. The child is both a joy and a responsibility, and the world will be a happier and more normal place when adults have learned to "live with the child".

Mental Hygiene Activities

The Mental Hygiene Society of Virginia will celebrate its fifth anniversary this spring at the Conference of Social Work at Roanoke, as it was from the Mental Hygiene Section of that organization that the Mental Hygiene Society had its origin. Soon afterwards a synopsis of the primary aims of the Society was published. These aims were as follows:

1. Establishment of a Director of State Hospitals with a unified system of control.
2. The establishment of psychopathic wards at both State Medical Schools.
3. An increase in the number of nurses and doctors at the State Hospitals, with the establishment of definite requirements for the positions on the State Hospital Service.
4. The establishment of clinics for the study of Mental Diseases throughout the State.

These objectives were practically identical with the recommendations that the Mental Hygiene Committee of the Medical Society of Virginia (which Committee existed for approximately ten years until it was discontinued in 1935) had placed before that organization annually without any apparent effect. Since the origin of the Mental Hygiene Society, however, practically every objective has been attained or is in the process of attainment.

It is now time to construct new aims and purposes if the Society is to continue to stimulate the people of the State to have continued interest in the prevention and cure of personality disorders. The leaders of the Selective Service System have shown the way. They have turned out to be Mental Hygienists of the first order. They want no repetition of the tragedies of the last war, when draftees totally unfit from a personality standpoint were sent to the training areas, only to break down and to remain wards of the Government for the rest of their lives. Thirty-eight thousand nervous and mental cases are now cared for by the Veterans Bureau and over \$900,000,000 has been spent on nervous and mental casualties since 1918. The Selective Service System has challenged the psychiatrists of the Country to prevent the recurrence of this holocaust. The psychiatrists have accepted the challenge, so are now stimulating the local Boards to eliminate those with unfit personality make-up. Slogans are being produced; first, "NO ONE WHO CANNOT GET ALONG AT HOME CAN

GET ALONG IN THE ARMY", and the second, "THIS MUST BE THE BEST ARMY IN THE WORLD".

Immediately it follows that the persons rejected by Selective Service for personality unfitness are in need of mental hygiene, so should be recognized to be followed by all the preventive measures at our command. The rehabilitation of these unfit should give a great impetus to the Mental Hygiene Society of Virginia.

The Mental Hygiene Survey published by the State Hospital Board, through the kindness of the Board, will be sent to all members of the Mental Hygiene Society. This magazine is filled with news. In the January number there is a splendid report on The Colony at Lynchburg, as well as a review by the State Hospital Director.

At present it appears that the Institute of Public Affairs might give one afternoon and night to the discussion of "Relation between Mental Hygiene and National Security," as well as "The Need for the Better Handling of Personality Disorders in the Future."

DAVID C. WILSON, M.D.

Miscellaneous

Three Quarters of a Century for Parke, Davis & Company.

The year 1941 marks the Diamond Anniversary of the founding of Parke, Davis & Company, a firm which had its inception in a small drug store in the City of Detroit, Michigan, and which, during the past seventy-five years, has become the world's largest makers of pharmaceutical and biological products.

From the very beginning, back in 1866, Parke, Davis & Company has engaged in research work with the object of making available to pharmacists and physicians, medicinal preparations of the highest degree of accuracy.

In the early seventies, pharmaceutical progress meant the discovery of new vegetable drugs. Energetic—and extensive—explorations gave to the medical profession such valuable and widely used drugs as Cascara and Coca. Then in 1879, came one of Parke-Davis's greatest contributions to pharmacy and medicine—the introduction of the first chemically standardized extract known to pharmacy. Desiccated Thyroid Gland, the first endocrine product supplied by the Company, was introduced in 1893.

One year later, Parke-Davis established the first commercial biological laboratory in the United States. In 1897 came the introduction of the first physiologically assayed and standardized extracts. And throughout these early years, the fundamental Parke-Davis policy—precision in pharmaceutical manufacture—was crystallizing.

Since the turn of the century, progress of the Company has continued apace. An aggressive program of research has been zealously pursued, marked by the introduction of such important medicinal products as Adrenalin, Ventriculin, Theelin, Pitocin, Pitressin, Mapharsen, Neo-Silvol, Antuitrin-S, Meningococcus Antitoxin, Dilantin Sodium, and many others. Diversified research activities cover the major phases of medical treatment—including the endocrine, biological, vitamin, and chemotherapeutic—and new discoveries are carefully evaluated through the Company's extensive facilities for clinical investigation.

The Company's home offices and research and manufacturing laboratories in Detroit occupy six city blocks on the Detroit Riverfront, adjacent to the Detroit-Walkerville ferry, which connects the City of Detroit with the Province of Ontario, Canada.

A beautiful farm of 700 acres, known as Parke-dale and located near Rochester, Michigan, about thirty miles from Detroit, is utilized for the production of antitoxins, serums and vaccines, and for the cultivation of medicinal plants.

In addition to its Detroit headquarters, branches and depots are maintained in important cities throughout the country, the list including Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Dallas, Denver, Indianapolis, Kansas City, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, and Seattle.

In the foreign field, to care for the Parke-Davis business which extends to every quarter of the globe, branches are located in London, England; Sydney, N.S.W.; Walkerville, Ontario; Montreal, Quebec; Toronto, Ontario; Winnipeg, Manitoba; Bombay, India; Havana, Cuba; Buenos Aires, Argentina; Rio de Janeiro, Brazil; and Mexico City, Mexico.

Through the use of full-pages in leading national magazines Parke, Davis & Company are carrying on an advertising program that has attracted wide attention. As might be expected, their advertising is unique, ethical, distinctive. They make no direct

attempt to sell their products to the public by means of this publicity. In a sincere effort to render a valuable service to the medical profession, they are running a striking series of messages based on the "See Your Doctor" theme and physicians throughout the country are constantly experiencing evidences of the results of this broad educational program.

Proposed Additions and Deletions for U. S. Pharmacopoeia XII.

Dr. H. B. Haag, in connection with his editorial on *The Scope of the New Pharmacopoeia*, has prepared the following Tables of proposed additions and deletions for the next Pharmacopoeia, which will be of interest to physicians:

ARTICLES NOT FORMERLY PHARMACOPOEIAL NOW RECOMMENDED FOR THE U.S.P. XII.

TABLE I.

Absorbent Gauze.
Absorbent Gauze, Sterile.
Adhesive Absorbent Compress.
Antipneumococcus Serum (the new monograph to cover all types).
Calaminae Preparata.
Calcium Mandelate.
Dextrose Solution (for injection 50 per cent).
Dextrose (50 per cent) and Sodium Chloride (30 per cent) Solution (for injection).
Elixir Cardamomii Compositum.
Elixir Iso-Alcoholicum.
Elixir Phenobarbitali.
Elixir Terpini Hydratis.
Ethyl Carbamate.
Gas-gangrene Antitoxin (to include types now used).
Gauze Bandage.
Glycocoll (Amino Acetic Acid).
Immune Serum for Scarlet Fever, Human.
Immune Serum for Measles, Human.
Immune Globulin (Placenta Extract) Human.
Lotio Calaminae.
Lotio Calaminae Phenolata (2 per cent Phenol).
Magnesium Trisilicate.
Oleum Hippoglossi (Halibut).
Ouabain.
Picrotoxin.
Picrotoxin Solution (for injection).
Potassii Chloridum.
Quinine Hydrochloride.
Quinine Hydrochloride with Ethyl Carbamate Solution (for injection).
Riboflavin.
Ringer's Solution.
Serums, Dry and Liquid forms authorized for all U.S.P. serums.
Surgical Silk and other Surgical Sutures Sterilized.
Syrupus Ammonii Mandelatis.

Syrupus Glycyrrhizae.
Syrupus Rubi Ideaei.
Tabellae Aminopyrinae.
Tetanus Toxoid.
Tetrachloroethylene.
Theobromine with Sodium Acetate.
Totaquinine.
Transfusion Normal Plasma, Human.
Transfusion Normal Serum, Human.
Trichloroethylene.
Urea.
Vitamin A and D in Oil (Cod Liver Oil Strength).
Zinc Peroxide.

The following additional items, needed as "pharmaceutical necessities," must be added as new admissions—

Compound Spirit of Cardamom.
Cudbear.
Oil of Caraway.
Oil of Cardamom.
Raspberry Juice.
Spirit of Bitter Almond.
Tincture of Cudbear.

ARTICLES OFFICIAL IN THE U.S.P. XI BUT NOT ADMITTED TO THE U.S.P. XII COMMONLY SPOKEN OF AS "DELETIONS"

TABLE II.

Acetum Scillae.
Acidum Aceticum Dilutum.
Acidum Acetyltannicum.
Acidum Sulfuricum Aromaticum.
Aconitum.
Albumini Tannas.
Amonii Benzoas.
Amonii Bromidum.
Ammonii Salicylas.
Arseni Triiodidum.
Asafoetida.
Bismuthi Subgallas.
Calcii Bromidum.
Calcii Creosotas.
Cannabis.
Cantharis.
Capsicum.
Carbo Activatus.
Carbromalum.
Ceratum Cantharidis.
Cinchona.
Colchici Semen.
Copaiba.
Creosoti Carbinas.
Creosutum.
Dichloramina-T.
Emplastrum Cantharidis.
Emulsum Asafoetidae.
Extractum Cannabis.
Extractum Nucis Vomicae.
Ferrum.
Fluidextractum Belladonnae Radicis.
Fluidextractum Cannabis.
Galla.

Guaiacol.
 Hydrargyri Iodidum Flavum.
 Iodoformum.
 Kino.
 Liquor Aminonii Acetatus.
 Liquor Ferri Chloridi.
 Liquor Ferri Tersulfatis.
 Magna Ferri Hydroxidi.
 Massa Hydrargyri.
 Merbaphenum.
 Mistura Opii et Glycyrrhizae Composita.
 Oleum Santali.
 Pancreatinum.
 Paraffinum.
 Pepsinum.
 Pilocarpinae Nitras.
 Pilulae Aloes.
 Podophyllum.
 Potassii Chloras.
 Pulvis Ipecacuanhae et Opii.
 Pulvis Sennae Compositus.
 Pyrogallol.
 Quinina.
 Resina Podophylli.
 Santoninum.
 Scilla.
 Serpentaria.
 Sodii Acetas.
 Spiritus Aethylis Nitritus.
 Spiritus Chloroformi.
 Strychninae Nitras.
 Sulfonethylmethanum.
 Sulfur Lotum.
 Syrupus Ferri Iodidi.
 Syrupus Scillae.
 Terebenum.
 Theobromina cum Sodii Salicylate.
 Tinctura Aconiti.
 Tinctura Cantharidis.
 Tinctura Capsici.
 Tinctura Cinchonae Composita.
 Tinctura Colchici Semina.
 Tinctura Ferri Chloridi.
 Tinctura Kino.
 Tinctura Scillae.
 Tinctura Valerianae.
 Tinctura Veratri Viridis.
 Unguentum Gallae.
 Valeriana.
 Veratrum Viride.

ber, 1940, compared with the same month in 1939 and for the period of January through December, 1940, compared with the same period in 1939 follows:

	DEC.		JAN.-	
	1940	1939	DEC. 1940	DEC. 1939
Typhoid and Paratyphoid Fever	17	23	276	470
Diarrhea and Dysentery-----	70	167	1,879	4,306
Measles -----	416	83	4,040	10,867
Scarlet Fever -----	198	230	1,784	1,568
Diphtheria -----	90	181	716	1,474
Poliomyelitis -----	12	3	243	46
Meningitis -----	5	1	76	58
Undulant Fever -----	1	1	23	22
Rocky Mountain Spotted Fever	0	2	43	50
Tularaemia -----	9	17	48	81

(NOTE: The State Department of Health is circulating a new bulletin on influenza as a part of its current health educational campaign. In the belief that the medical profession might be interested in the contents of this publication it is printed in full below):

Influenza.

WHAT IS INFLUENZA?

Influenza is a very contagious disease which attacks the air passages or organs with which we breathe. It occurs in the form of epidemics. These epidemics vary considerably in extent and intensity; some affect only a small number of people or do not spread very far. Others attack many persons and spread extensively. During some of the severe epidemics complications such as pneumonia may result in many deaths as in the 1918-1919 epidemic.

Many people think of influenza as meaning any bad cold, indeed it is frequently very difficult for the doctor at the outset to distinguish between them. This is especially true when an epidemic is just beginning or when there are only a few cases in the community. However, influenza is a true disease. It is due to a special kind of virus or germ, so small that it cannot be seen even by the use of a microscope. Influenza differs from ordinary coughs and colds in several ways. First, it spreads through a community much faster and farther than colds; second, it can occur at any season of the year, whereas coughs and colds are usually only numerous during the cold months; and finally, influenza develops more suddenly, with the general symptoms, such as fever and aching, much more severe than in the case of colds.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for Decem-

HOW IS IT SPREAD?

Influenza is a very catching disease. It spreads from person to person by means of "droplet infection". That is, small drops of moisture or mucus containing the virus are thrown off into the air from the mouth and nose of a person who has these germs by coughing, sneezing, laughing or even loud talking. These drops may be discharged with such force that they reach the nose and mouth of another person standing a short distance away (perhaps about 3 feet) or they may float about for a short time, though it is now known that this and many other diseases are not spread over long distances by means of winds and currents. Influenza also spreads through the handling or using of other persons' handkerchiefs, drinking cups, and other articles soiled by the discharges of one who has the germs in his nose or throat.

HOW DOES IT AFFECT ONE?

Influenza may begin very much like a cold but the symptoms are usually more severe. In most cases a person who becomes ill with influenza feels sick rather suddenly. He feels weak. His head, back and limbs ache. He may have pain in his eyes or ears or he may be sore all over. Most patients complain of feeling chilly, a few have real chills. A fever in which the temperature rises to 100 to 104 develops. Many patients feel dizzy. There may be symptoms of a cold, such as a raw feeling in the nose and throat with a little running from the nose, though these are generally not marked. Nevertheless, the patient looks and feels very sick. A dry, hacking cough may develop but very little is brought up with the cough.

In three to four days as the temperature begins to fall the patient begins to feel better and recovery begins. Usually it takes several days at least for the patient to return to his usual duties and it may take much longer. Weakness and depression may be quite marked, and distressing symptoms arise if he attempts his full activity too soon. There is great danger too of the development of serious complications if time is not allowed for proper recovery, or if proper care is not taken during the actual illness.

CAN IT BE PREVENTED?

No health department or other agency can prevent the occurrence of influenza with the facilities now available. Many capable scientists are devoting time and skill toward the discovery of a vaccine or other

agent which will protect against this disease but as yet none has been found. This does not mean that we cannot do anything about the disease. There are many things that can be done to delay the spread of an epidemic and to increase greatly the chance of an individual's recovering from this illness without serious complications. The success of these measures, however, depends absolutely upon individual efforts involving his own behavior and habits, and the co-operation of everyone in the protection of the whole community.

There are three main goals which every person should keep in mind and try diligently to attain if he is to contribute his share toward reducing the danger of influenza during epidemics of this disease:

1. To do everything practical to prevent getting the germs into his nose and throat.
2. To do everything within his power to keep himself in the best possible physical condition.
3. To take the same precautions against transmitting germs to others as he would have them observe toward him.

There are several simple rules by which these goals can be reached; so simple that they are too often ignored. Nevertheless, they are most important if we are to accomplish results in our efforts to combat influenza.

TO PREVENT GETTING THE GERMS:

1. *Keep away from persons who are coughing and sneezing.* If possible stand at least two and one-half feet from anyone you are talking to.
2. *Stay out of the room where a person is sick with any respiratory disease,* unless you are needed to look after the patient.
3. *Do not put your fingers, articles or anything else into your mouth that does not belong there.*
4. *Avoid the use of common utensils and articles.* Do not drink out of a cup others have used and do not use a towel or handkerchief after someone else.
5. *Insofar as possible keep out of crowds,* especially crowds indoors.

TO KEEP THE BODY STRONG:

1. *Eat a wholesome diet at regular hours.* Take plenty of simple nourishing food; avoid excessive eating and excessive use of alcoholic drinks.
2. *Get plenty of sleep*—at least eight hours of sleep for an adult and more for children according to age.
3. *Avoid fatigue and cold.* If you become overly

tired or get cold you lower bodily resistance. Change your clothing with the weather and not the season.

4. *Work and sleep in rooms filled with fresh air.* Proper ventilation means an adequate supply of fresh air but drafts should be avoided.

5. *Take a reasonable amount of exercise in the open air as often as possible.*

TO KEEP FROM SPREADING GERMS TO OTHERS:

1. *Cover your mouth and nose with a handkerchief when you sneeze or cough.*

2. *Do not spit on the floor or street.* Paper tissues or cloths which can be disposed of should be used.

3. *Wash your hands frequently.* If you soil your hands by sneezing, coughing, or blowing your nose and then shake hands with someone else, you pass your saliva and discharges on to him.

4. *Refrain from kissing children or anyone on the mouth even though you feel perfectly well.*

5. *If you begin to feel sick, go to bed at once, away from the rest of the family and stay there until the doctor says it's safe for you to be up.* This will accomplish two very desirable purposes; a source of spreading the disease is isolated from others and the best chance of the patient recovering without serious complications is assured.

From what has been said it is plain that an individual can do more in protecting himself and others against influenza than the health department can do for him. The question for each one to ask himself is how best, without being foolish, can I reduce the chances of getting germs from other people into my own nose and mouth. To follow the simple hygienic practices and rules just indicated is the sensible answer to that question. It is not enough to observe just one rule, as a matter of fact even if all of them are honestly carried out there will still be some danger but this danger will be far, far less than if we did nothing.

In case you are unfortunate enough to catch influenza, go to bed at once, send for a physician and follow his instructions. If medical service is not available, stay in bed carefully covered for three or four days or until all symptoms have disappeared. Medicine or drugs of any kind, unless prescribed by a doctor, should never be taken. They may actually be dangerous. The patient should be very careful not to get up too soon and the return to his work should be gradual. He should avoid getting over-tired, especially at first. These precautions

are wise ones to follow for bad colds as well as influenza, particularly if the patient has a fever.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Alexandria Auxiliary.

The officers for 1941 are: President, Mrs. C. E. Arnette; president-elect, Mrs. H. A. Hornthal; vice-president, Mrs. W. E. Beattie; secretary, Mrs. George Lemeschewsky; and treasurer, Mrs. C. V. Amole.

The Alexandria Auxiliary assists in the maintenance of a bed for a physician or members of a physician's family at the Blue Ridge Sanatorium. A contribution of \$36.50 for this purpose was made during this past October.

The Auxiliary redecorated and helped furnish a doctor's room at the Alexandria Hospital. There is a committee in charge of this room and the Auxiliary is responsible for the upkeep of same.

Members donate their time and assistance to the annual drives of the Red Cross, the Cancer Society, the Tuberculosis Association and the Community Chest, as well as donating time and materials to the Alexandria Community Clinic. During this year they have made a contribution of \$10.00 to this clinic. At the request of the hospital superintendent, some of the members have offered their assistance on Sunday at the Hospital.

As was done last year, the Auxiliary recently provided *Hygeia* subscriptions to the local public schools, both white and colored, and to the Public Library.

Plans are being made for a benefit bridge party at Gadsby's Tavern the latter part of January, the pro-

ceeds to be used to further the activities of the Auxiliary.

MILDRED LEMESHEWSKY,
(MRS. GEORGE LEMESHEWSKY),
Secretary.

Williamsburg-James City Auxiliary.

The new officers for 1941 are: President, Mrs. C. E. Holderby; vice-president, Mrs. E. T. Terrell; recording secretary, Mrs. T. B. Henderson; treasurer, Mrs. B. I. Bell; *Hygeia*, Mrs. F. R. Person; and publicity chairman, Mrs. Henderson.

The Auxiliary met January 7 at the home of Mrs. Holderby, with seven members and two visitors present. We had an exhibit of fancy work made by the patients at the Eastern State Hospital and Dr. E. T. Terrell gave a very interesting talk on Psychiatry.

We had a short talk and discussion of Jane Todd Crawford and each member was given a copy of a short history of her life.

We made contributions to the Jane Todd Crawford Memorial Fund and the Leigh-Hodges-Wright Memorial Bed.

MARION HOLDERBY,
(MRS. C. E. HOLDERBY),
President.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

The Upjohn Company.

Tablets Ascorbic Acid, 15 mg.

Tablets Ascorbic Acid, 25 mg.

Tablets Ascorbic Acid, 50 mg.

Tablets Ascorbic Acid, 100 mg.

Tablets Nicotinic Acid, 20 mg.

Tablets Nicotinic Acid, 50 mg.

Tablets Nicotinic Acid, 100 mg.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Tablets Ascorbic Acid-Squibb, 100 mg.—Each tablet is equivalent to 2,000 International units of vitamin C. E. R. Squibb & Sons, New York, N. Y.

Propaganda for Reform

Poison Ivy Dermatitis.—An alkaline vanishing cream containing a nonirritant, nonstaining oxidizing agent such

as sodium perborate or potassium periodate is now recommended as an effective preventive against poison ivy dermatitis. By incorporating either of these drugs in an ointment and applying it to the skin of the arms and the face before exposure, even those who are previously ascertained to be highly susceptible may be effectively protected. Preliminary tests on a limited number of volunteers with a 10 per cent sodium perborate ointment, to which a poison ivy extract of well-known manufacture representing a concentration fifteen times greater than that of the toxin in the fresh leaf was applied, failed to elicit reactions. After satisfactory performance in the laboratory, the prophylactic cream was tested by actual contact and handling of poison ivy foliage. An hour later the cream was washed off with soap and water; reactions did not occur. The United States Public Health Service, which developed this technic, recommends that vanishing creams containing oxidizing agents such as those referred to be prepared for use at least every two weeks to avoid deterioration. They should be rubbed well into the skin of the arms and face before each exposure. Soap and water used to remove the deposit of the powdered oxidant on the skin will emulsify it and wash away whatever toxins are lodged in the pores or on the skin. (*J. A. M. A.*, September 7, 1940, p. 862.)

Five-Day Treatment of Early Syphilis.—In *The Journal*, September 7, 1940, p. 857, appears a report by the Council on Pharmacy and Chemistry of the American Medical Association relative to the so-called five-day treatment for early syphilis. Obviously there are considerable advantages in any method of treatment of syphilis which can be completed in a brief period of time, so that the results, if even approximately comparable to those obtainable with systems of treatment requiring months or years, are likely to bespeak for such a method the most favorable consideration. However, there seems to be a chance equivalent to about one in a hundred that patients treated with this technic with either neoarsphenamine or mapharsen may develop in a more or less severe form of the most serious of all arsenical reactions—hemorrhagic encephalitis. Moreover, in patients treated by this technic, peripheral neuritis was encountered in 35 per cent of patients given neoarsphenamine and in 1.7 per cent of those given mapharsen by the intravenous drip method. Fevers and toxicodermas also occurred. Obviously, many more studies will need to be made both of patients under controlled conditions in hospitals and of animals in the laboratory to establish definite criteria for the use of this new technic. (*J. A. M. A.*, September 7, 1940, p. 863.)

Bromides in Medicine.—Recently bromide intoxication has become so prevalent that there is no longer any question that the various bromide preparations possess distinctive effects, especially on the central nervous system. A frequent cause of intoxication is continued self-medication by patients using prescriptions issued by physicians to alleviate the chronic suffering of the alcoholic addict or psychoneurotic individual. This should constitute an

ample warning against any desire for casually prescribing a bromide preparation for headaches, insomnia, restlessness or so-called nervousness, without cautioning patients about "follow-up" visits.

Bromide intoxication does vary with the individual and indiscriminate use of bromides, such as in proprietary sedatives, has led to many cases of chronic bromide intoxication. The Council reports that bromide therapy should not be attempted without careful control of the dosage both of bromide and of salt, so that the blood bromide concentration is not allowed to rise above the 125 to 150 mg. per hundred cubic centimeter level, which is the maximum safe therapeutic concentration. Care should be taken that the patient is not allowed to continue bromide medication without supervision. (*J. A. M. A.*, September 14, 1940, pp. 933 and 937.)

Book Announcements

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Anderson, W. N.—Physical diagnosis.
 Arey, L. B.—Developmental anatomy.
 Ballenger, H. C.—Manual of otology, rhinology and laryngology.
 Barker, L. F.—Psychotherapy.
 Berman, J. K.—Synopsis of principles of surgery.
 Blalock, A.—Principles of surgical care, shock and other problems.
 Bodansky & Bodansky—Biochemistry of disease.
 Bullowa, J. G. M.—The specific therapy of the pneumonia.
 Clark, G. L.—Applied X-rays.
 Clayton, E. G.—A compendium of food-microscopy.
 Comroe, B. I.—Arthritis and allied conditions.
 Craig & Faust—Clinical parasitology.
 Dennie & Pakula—Congenital syphilis.
 Eagle, H.—Laboratory diagnosis of syphilis.
 Funk, W.—If you drink.
 Goldstein, K.—Human nature in the light of psychopathology.
 Gordon, E. S.—Vitamin therapy in general practice.
 Hasenjaeger, E.—Asepsis in communicable disease nursing.
 Hawes, J. B.—Diagnosis and treatment of tuberculosis.
 Herms & Gray—Mosquito control.
 Holt & McIntosh—Diseases of infancy and childhood. 11th ed.
 Hurst, A.—Medical diseases of war.
 Jacobs, P. P.—The control of tuberculosis in the U. S.
 Kremers & Urdang—History of pharmacy.
 Levinson, C. A.—Food, teeth and larceny.
 Lord, F. T. et al.—Chemotherapy and serum therapy of pneumonia.

- Macnaughton-Jones, H.—Hearing and equilibrium.
 McCurdy & Larson—The physiology of exercise.
 Mennell, J. B.—Physical treatment by movement, manipulation and massage.
 Military medical manual.
 Miller, E.—The neuroses in war.
 Munchereryan, H. M.—Modern physics of roentgenology.
 Muncie, W.—Psychobiology and psychiatry.
 Rogers & Muir—Leprosy.
 Rony, H. R.—Obesity and leanness.
 Sobotka, H.—The chemistry of sterids.
 Stimson, P. M.—A manual of the common contagious diseases.
 Stix, R. K.—Controlled fertility.
 Stroud, W. D. ed.—Diagnosis and treatment of cardiovascular disease.
 Szent-Györgyi, A. V.—Oxidation, fermentation, vitamins, health and disease.
 Taber, C. W.—Cyclopedic medical dictionary including a digest of medical subjects.
 Visscher, M. B.—Chemistry and medicine.
 Visscher, M. B.—Experimental physiology.
 Windle, W. F.—Physiology of the fetus.
 Yearbook of physical therapy. 1940.
 Young, H.—A surgeon's autobiography.

Applied Pharmacology. By HUGH ALISTER McGUIGAN, Ph.D., M.D., F.A.C.P., Professor of Pharmacology and Therapeutics, University of Illinois, College of Medicine. St. Louis. The C. V. Mosby Company. 1940. Octavo of xiv-914 pages. Illustrated. Cloth. Price, \$9.00.

This is not merely a new edition of an old book, but an entirely new book in all but subject. The author has attempted to depart from the usual encyclopedic form of most texts in this field, and to interpret pharmacological phenomena in terms of the underlying chemical and physiological changes. While such a treatment of the subject may tend to confuse and overawe the student who is not familiar with the fundamentals of chemistry, it appears inevitable that chemistry should play an increasingly important role in the medical sciences.

It is hardly possible for an author to write a text in any scientific field which will appear perfect in all its details to others in the same field; consequently, the reviewer notes several instances in which this text falls below its general level of high quality. In the fairly complete discussion of traumatic shock apparently no mention is made of the important investigations of Blalock et al. Also, he fails to note that the results of Haggard and Greenberg on the rate of oxidation of alcohol in the body are not universally accepted. The most serious criticism which the reviewer finds concerns the chapters on both general and local anesthetics. These subjects are suffi-

ciently important to warrant a discussion in more detail. Further, in connection with local anesthetics, not all the data presented are in agreement, particularly with respect to cocaine and procaine. While most of the book is quite up to date the chapter on tobacco and nicotine does not take into account much of the important work of the past six or eight years.

In spite of the few criticisms given above, McGugin's *Applied Pharmacology* deserves an important place in the teaching of this subject.

J. H. WEATHERBY.

The March of Medicine. Edited by the Committee on Lectures to the Laity of the New York Academy of Medicine. New York. Columbia University Press. 1940. 168 pages. Cloth. Price, \$2.00.

This is a collection of six popular lectures, sponsored by the New York Academy of Medicine in 1938 and 1939, which gives in an entertaining style a general historical survey of the development of medicine. Outstanding authors have contributed to this work; and the lectures have been so chosen that they form together a very homogeneous collection. The physician should find this book very amusing as light reading; and the layman should find it very instructive. The present book is number IV edited by this group.

C. R. SPEALMAN, M.D.

Handbook of Orthopaedic Surgery. By ALFRED RIVES SHANDS, JR., B.A., M.D., Medical Director of the Nemours Foundation, Wilmington, Delaware; Associate Professor of Surgery in Charge of Orthopaedic Surgery, Duke University School of Medicine, Durham, North Carolina (On Leave of Absence). In Collaboration with RICHARD BEVERLY RANEY, B.A., M.D., Associate in Orthopaedic Surgery, Duke University School of Medicine. Illustrated by Jack Bonacker Wilson. St. Louis. The C. V. Mosby Company. 1940. Octavo of 567 pages. Cloth. Price, \$4.25.

This recently acquired book is a second edition of one which has previously been in our library. It is a small book on this subject and is evidently designed for students' use. For this purpose the authors are to be commended for the presentation. No effort is made to give a detailed study of small topics but an excellent bibliography is included. In numerous places the authors' ability to describe clearly and concisely is displayed and their own opinions on controversial points are skillfully but briefly introduced. Some added care in the use of exact anatomical terminology would improve future editions.

The book is highly recommended to students for reading from cover to cover.

THOMAS BEATH, M.D.

Bacillary and Rickettsial Infections. Acute and Chronic. Black Death to White Plague. By WILLIAM H. HOLMES, Professor of Medicine, Northwestern University Medical School; Chairman, Department of Medicine, Passavant Memorial Hospital, Chicago, New York. The Macmillan Company. 1940. 676 pages. Cloth. Price, \$6.00.

If more texts for instruction in the medical sciences were written in this form, reading assignments would be a more pleasant task for the student.

The approach to the subject from the historical viewpoint is entirely different from the usual conception of what a textbook should include. The reading of this volume should stimulate other teachers to try this method of presentation and give the student an opportunity to develop a cultural background, while he is assimilating essential facts.

J. DOUGLAS REID.

Methods of Treatment. By LOGAN CLENDENING, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals. And EDWARD H. HASHINGER, A.B., M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals; Attending Physician, St. Luke's Hospital, Kansas City. With Chapters on Special Subjects by J. B. Cowherd, M.D., Leland F. Glaser, M.D., Thomas B. Hall, M.D., John S. Knight, M.D., H. P. Kuhn, M.D., Paul H. Lorhan, M.D., F. C. Neff, M.D., Don Carlos Peete, M.D., Carl O. Rickett, M.G., E. H. Skinner, M.D., O. R. Withers, M.D., and Lawrence E. Wood, M.D. Seventh Edition. St. Louis. The C. V. Mosby Company. 1941. Octavo of 997 pages. Illustrated. Cloth. Price, \$10.00.

There is still need for the perfect textbook on therapy—one voluminous enough to answer every question that the busy practitioner from time to time must have answered, one with a complete and accurate index to promote rapid reference, one with a wealth of photographic and diagrammatic illustrations, one with a painstaking outline of all procedures step by step. Such a textbook is yet to be written.

Cleldening and Hashinger in the *Methods of Treatment* have produced a good book though it is lacking in some of the essentials noted above. For example: one searches in vain in the index for directions for giving a vaginal douche and for irrigating the throat, and unless one had already had experience, one would have difficulty in giving a simple enema from the given description. Such charges are not too serious in the case of a book which demonstrates that it has already won its spurs in useful service by going into its seventh edition.

W. B. B.

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Editor

AGNES V. EDWARDS
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Editorial

The Medical Practice Act.*

The necessity for certain laws governing the care of the sick has been recognized in the Commonwealth of Virginia for more than two centuries, and statutes relating to various aspects of medical practice have been enacted during that period. It was not, however, until 1884 that standards were prescribed for practitioners themselves. In that year a bill was passed by the Legislature requiring that those seeking licenses to practice medicine must first be examined by a duly appointed board and their qualifications established before such licenses could be issued. Thus the Medical Practice Act came into being. As knowledge of disease has increased and methods of management have changed the Act has from time to time been amended so that gradually the requirements for medical licenses in Virginia have been strengthened with the objective always in view of affording a greater measure of protection to the people against the ministrations of substandard healers. In its present form Virginia's Medical Practice Act is considered to be one of the best in the nation.

In this developmental process, each forward step has been initiated by physicians and consummated

with the support of intelligent laymen, convinced that by such measures the interests of their fellow citizens would best be served. Physicians have proposed, when it seemed necessary, that standards be elevated and in doing so have been prompted by a sincere interest in the welfare of the people rather than in the hope that they themselves would secure any special advantage. In no instance have the people, because of any realization of inadequate medical care, inaugurated any of these measures. On the contrary, the medical profession itself, as medical education advanced, has seen to it that only the best qualified practitioners could obtain the right to practice in Virginia.

But what has been accomplished has not come about without effort. Numerous unsuccessful attempts were made prior to 1884 to secure legislation to establish the quality of practitioners themselves, both by individual doctors and later through their organization, the Medical Society of Virginia. In these and later efforts opposition has always been forthcoming, not only from various cults of healers but also from weak proprietary medical schools, who were unwilling to submit their graduates to the test of an examining board. Such schools no longer exist and, if one occasionally appears, it is branded as inferior by a proper grading authority

*The Committee on Cost of Medical Care was non-partisan, comprised of less than one-fourth doctors and financed by philanthropic foundations.

and its graduates are not admitted to examination in this State. It is seen then that the Act serves as a stimulus to medical schools everywhere to keep up the level of their teaching facilities and equipment.

Various cults, purporting to heal the sick by devious methods, have always existed. All have fought the Medical Practice Act on specious grounds but in truth for the reason that it requires, as a prerequisite to practice, knowledge of the human body and its diseases that they do not possess. A few have realized their error and are now training their students in the fundamental branches so that they are equipped to take the State Board examinations and are recognized as qualified to treat the sick. Other cults attempt from time to time to weaken the Medical Practice Act and gain admission for themselves. Bills are introduced into the Legislature under deceptive titles and always with the plea of persecution by the medical profession. Nothing is further from the truth. The Medical Practice Act is aimed at no particular sect nor does it advocate or prohibit any form of treatment. Its provisions operate just as forcibly toward eliminating unfit doctors of medicine and suppressing weak medical schools as in restraining the activities of cultists who are unable or unwilling to meet its requirements.

Though only one of numerous healing cults, the chiropractors have of late been the most active in seeking recognition. Of their schools the report of the* Committee on the Cost of Medical Care, after a thorough survey, has this to say: "Without exception, all the chiropractic schools are business institutions run for the profit of their owners. Most of them fairly reek of commercialism. * * * Not one of these institutions really requires its entering students to have had even a high school education. There are probably fewer than a half dozen really qualified teachers in the twenty-one institutions. Not one conducts a clinic where the really serious ailments and diseases can be studied. Not one has laboratory facilities which by any reasonable standards could be considered adequate. Not one offers students the opportunity of practicing or even observing in a reputable hospital. From any sound point of view the education given must be regarded as hopelessly defective and inadequate—and extreme-

ly expensive at the price." In the face of this, the only survey of their schools made by an outside agency in recent years, they come before our Legislature with a highly paid lobbyist and claim that their students are thoroughly trained in the fundamental branches and are qualified to treat the sick.

Manipulations of the spine, massage and kindred forms of therapy are usually harmless, though in some instances they may not be, and when judiciously employed they are often of real value. The objection to licensing healers, who rely exclusively on this type of treatment for all patients, is that they apply it where it is not needed and fail to recognize serious illnesses which oftentimes can be cured by proper management. In a recent decision by the Supreme Court of a State in which chiropractors are licensed, the judgment of a lower court, awarding damages against a chiropractor, was upheld. The case was one of meningitis in a child, proven by autopsy. The chiropractor had made no laboratory or other studies suitable to establish the true condition but on the basis of his "spinal analysis", which he said showed a "subluxation", he had continued to give adjustments to the end in complete ignorance of the condition with which he was dealing. He was apparently licensed to practice but was convicted of carelessness and negligence. This is but one of many illustrations that might be given of the results of such practice.

Not only do the people of the State suffer at the hands of this type of healer, but the health departments, charged with the control of communicable diseases, would be seriously handicapped in their work, were they forced to depend for reports upon those who do not believe in germs and who hold that gonorrhoea results from a misplaced vertebra. Mistakes of judgment are inevitable even by the best trained physicians, but mistakes due to ignorance are in large measure preventable. It is therefore earnestly submitted that sound training in the fundamental sciences should be demanded of all practitioners regardless of the type of treatment they emphasize.

The physicians of this Commonwealth through their organization, the Medical Society of Virginia, are committed to the preservation of the Medical Practice Act and to strengthening it as occasion demands. They are also committed to the task

*Prepared by a Subcommittee of the Committee on Legislation of the Medical Society of Virginia.

of seeing that the Act is enforced without fear or favor. To this end the support of the thinking people of this Commonwealth, expressed through their Representatives, is earnestly invoked and from past experience it is firmly believed that this support will not be lacking.

J. M. H.

Scope of the New Pharmacopoeia.*

Although scarcely six months have elapsed since the Pharmacopoeial Convention met in Washington much work has already been done in completing the groundwork for the Twelfth Revision of the United States Pharmacopoeia.

Of particular interest to the medical profession is the question of what drugs will be included in the next Pharmacopoeia. This question is largely in the hands of the Sub-Committee on Scope, which has as its Chairman, Dr. Walter A. Bastedo. In response to a request from the General Chairman of the U. S. P. Committee of Revision, the President of the Pharmacopoeial Convention, Dr. C. W. Edmunds, and Dr. Bastedo have outlined the policy under which medicinal substances will be admitted to the Pharmacopoeia.

"The Sub-Committee on Scope, which decides Admissions and Deletions for a new Pharmacopoeia, is primarily responsible for the value and usefulness of the book to the medical profession. The fundamental medical and pharmaceutical objectives of the Pharmacopoeia from the time it was established have been to include a selected list of the best known and most thoroughly tested medicines of each revision period and also suitable usage or dosage forms or preparations of these important basic medicines. It has always been the aim of those responsible for the Pharmacopoeia that it should be so comprehensive as to meet every need of medical practice, in so far as there are efficient medicinal products and medical aids known and available.

"This principle of Pharmacopoeial admissions has been maintained and practiced since 1820 and was emphatically reaffirmed by the Sub-Committee on Scope during the recent meeting of the Committee of Revision. When it is determined that a medicinal substance or preparation fails to meet the standard of therapeutic excellence or service re-

quired by the Revision Committee or when a patent situation intervenes, such a substance, or preparation, is denied admission to the Pharmacopoeia. This policy of the Pharmacopoeia of the United States is the basic policy for all Pharmacopoeias of the world. Under it is included any substance or preparation used in medicine which in the opinion of its experts is worthy of Pharmacopoeial recognition. Under this accepted policy, the Pharmacopoeia has been able to develop and maintain a unique voluntary service to medicine, pharmacy, and the public, a contribution recognized and accepted by the medical and associated professions, and the manufacturing drug industry, and adopted by State and Federal legislation."

The Sub-Committee on Scope has already prepared a tentative list of articles which have not formerly been in the Pharmacopoeia but which are now suggested for inclusion (Table I),[†] and has also prepared a second list which contains articles which are now in the Pharmacopoeia but which are recommended for deletion from the Twelfth Revision (Table II).[†]

The Pharmacopoeia is a physician's book, the careful revision of which has played a large part in elevating American medicine to its present relatively high state of rational therapeutics. It is the sincere wish of all of those responsible for the issuing of this book that it should meet the desires of the medical profession. In line with this ideal it is urged that all who have any suggestions which they believe might increase the value of the Pharmacopoeia to the medical or pharmaceutical professions, or to the public, send such comments to the General Chairman of the Committee of Revision, Dr. E. Fullerton Cook, 43rd Street and Woodlawn Avenue, Philadelphia, Pennsylvania.

H. B. H.

A New Virus Vaccine Against Influenza.

A few days ago enough of Horsfall's and Lennett's influenza vaccine to inoculate 6,300 persons was received in one of the large cities of Virginia. Under the aegis of the State and local boards of health, this vaccine, which has already been employed in the California epidemic, is being given clinical trial among students and industrial employees. The

*By H. B. Haag, M.D., Professor of Pharmacology, Medical College of Virginia.

[†]Tables appear in Miscellaneous Department on pages 114-115, in this issue.

results, of course, cannot be tabulated for months to come. The vaccine is given in a single injection. It consists of a suspension of material recovered from chick embryos infected with a combination of human influenza and dog distemper. For some reason when these two viruses are combined a vaccine is developed which is protective against all strains of influenza, at least in ferrets.

Climbing with Science Through 1940.

Another year has ended and attempts are being made to balance the scientific ledger to see just what gains have been made in the various fields of concentration.

Uranium 235 still holds the spotlight for potential power. Its possible uses stagger the imagination. Mesotron is a new particle playing a mysterious part in the forces that hold the atom together. More information on it has come this year. New elements have been discovered, elements 85, 87, 93 and 94. New knowledge concerning the isotopes of sulphur give promise of a better understanding of the part it plays in metabolism.

During the year the Rockefeller Foundation granted more than one million dollars to the construction of the world's largest cyclotron designed to produce energies of more than one hundred million volts. A record high pressure of three million pounds per square inch was obtained by workers at the Carnegie Institute in Washington.

Astronomers discovered four new comets, and astrophysicists calculated that Ras Algethi, not Antares, is the largest star known to man.

Petroleum products, oil, coke and coal, were made from grass, seaweed, cornstalks and cotton. Starch, hitherto believed to be exclusively the result of a biologic process in plants, was synthesized from glucose. New work was done with colchicine, a chemical mysteriously capable of influencing the size of fruits and flowers. A new zoological apparition, the kouprey, a wild ox, was discovered in Indo-China.

In the field of medicine, work on pituitary hormones has advanced, while thialin, and pantothenic acid have been synthesized. A new vitamin has been discovered in milk capable of preventing stomach ulcers in guinea pigs. Riboflavin has been related to the keratitis of infancy and vitamin E has been shown to influence muscle weakness. As an outgrowth of the war, blood plasma in liquid

form, capable of being preserved from two to three years at ice box temperature, and not requiring typing, has been shown to be useful as transfusing fluid, and the possibility of the use of dried plasma has been definitely established.

Work on the virus diseases has gone forward apace. The new Rockefeller vaccine against influenza is still in the experimental stage, however, and the baffling fact remains that there are hundreds of different types of the virus, each capable of producing the disease. It is possible that we may be nearer a poliomyelitis vaccine in the development of a brain suspension of mice infected with virus of monkey origin which had previously been passed through rats. Experiments with vaccinations against measles also offer promise.

The work in cancer leaves the etiologic riddle still unsolved, although such experiments as the production of sarcomas in mice by extracts of livers of persons who died of cancer show that activity in this field of research is still intense.

Other achievements of the year remain to be noted such as bone marrow transfusion in leukemia and aplastic anemia, the treatment of wounds with plaster of Paris dressings and the apparent demonstration that phytin and inositol are capable of restoring hair to bald rats and that this substance may be recovered from the liver.

Strange Disease.

Warren Vaughan is a tireless apostle of allergy. During recent years he has written two books addressed to his patients. Last year he produced a textbook for physicians. His latest book, *Strange Malady*, under the imprimatur of the A. A. A. S., is addressed to the sixty million potential sufferers from allergy in the United States. There is every reason to believe that the popular imagination which has been stirred by the terms "Black Death" and "White Plague" will be responsive to this cognomen. It is a translation of the Greek word "atopy" suggested to Dr. Arthur F. Coca by a Columbia professor in response to his request for a name for the strange disease of allergy.

Vaughan's book is skilfully executed. It is full of interesting material and is certain to receive acclaim. Appraised historically, it must take its place as a good example of the popularization of medicine. In 1747 John Wesley wrote a book on *Physick* for his parishioners. The Nineteenth Century was over-

run with "Medical Companions" written by doctors for public consumption. Only recently the editor of *The Journal of the American Medical Association* has produced volumes on medicine designed to enlighten lay minds. Scientific fact is at first the property of the few, then of the many. In just such ways as these does learning leaven the lump of ignorance.

Looked at another way—in mildly humorous fashion—such books might be considered a good example of how doctors make trouble for themselves. All of us know the delight of treating the patient who knows nothing of his disease, nothing of the significance of his symptoms, who casts himself upon our mercy, confidently expecting to be made well, and helping to make himself well by an unquestioning obedience to our directions and an unwavering faith in our ability. And all of us know the torture of treating the patient who knows everything about his disease, everything about the significance of his symptoms, who doesn't trust us around the corner, doesn't expect to be made well, and hinders his recovery by his refusal to follow instructions, his self-medication and preconceived notions.

"And, Doctor," said the patient whose affliction was being demonstrated recently to a class of students in allergy in one of our medical colleges, "don't forget to tell the gentlemen that the disease is hereditary. My father and my grandfather had it before me. And don't forget to explain the emotional factor. I'm much worse when I am nervously upset."

All of us know, too, the difficulty of helping a patient who is tormented with fear of all the dreadful consequences that he has read of in magazine or newspaper. The danger of Americans becoming illness-minded is not unreal. Vaughan shows himself aware of this tendency by quoting good old Robert Burton's warning that a man "by applying that which he reads to himself, aggravating, appropriating things generally spoken, to his own person (as melancholy men for the most part do)," may "trouble or hurt himself and get, in conclusion, more harm than good."

And yet the pathway of ease can never be for the physician. Only the quack doctor stoops to succeed by keeping his clientele in ignorance. Education is a part of modern medicine's ministry of healing. Vaughan, like all good doctors, is a teacher as well as a physician.

Proceedings of Societies

The Northampton County Medical Society

Met at Eastville, January 13th, for its annual business meeting, at which time Dr. Thomas Francis McGough, Director of the Northampton County Health Unit, was elected to Honorary Membership in the Society.

The Society, in conjunction with the local Health Unit plans to establish a "Well Baby" clinic in the county, hoping thereby to reduce the county's present high infant mortality of 82.9 per 1,000 live births.

The Society's Committee on Syphilis reported that, during 1940, 180 anti-syphilis clinics had been held in the county and over 6,000 injections had been given. Large numbers of patients had been made non-contagious, thus reducing the number of new cases. Dr. J. W. Jackson, Dr. S. K. Ames, and Dr. W. J. Sturgis constitute the Committee but most of the doctors in the county work on this

and other Clinic Committees.

The Maternal Welfare Committee reported care of 132 mothers and the delivery of 119 babies under Clinic supervision during 1940. There were no deaths. Members of this Committee are: Dr. J. G. Goode, Dr. J. W. Jackson, and Dr. H. L. Denoon.

The Committee on Medical Preparedness, consisting of Drs. J. E. Gladstone, W. C. Henderson, H. L. Denoon, and J. R. Hamilton, revealed that practically every doctor in the county is giving his services free to the Government in the examination of volunteers and conscripts.

Dr. Griffin W. Holland was elected to succeed himself as Member of the Board of Trustees of the Northampton-Accomack Memorial Hospital, representing the Northampton County Medical Society. He will serve for four years along with Dr. W. J. Sturgis.

The Society decided to have "Ladies' Night" on April 14, 1941.

Election of Officers for 1941 resulted as follows: President, Dr. S. K. Ames, Cape Charles; Vice-President, Dr. J. R. Hamilton, Nassawadox; Secretary, Dr. W. C. Henderson (re-elected), Nassawadox. Members of the Board of Censors are: Dr. H. L. Denoon, Dr. J. M. Lynch, and Dr. W. T. Green.

W. C. HENDERSON,
Secretary.

Albemarle County Medical Society,

At the recent meeting of this Society Dr. William H. Wood, Jr., for the past two years secretary, succeeded Dr. H. B. Mulholland as president. Other officers are: Vice-President, Dr. G. S. Fitz-Hugh; and Secretary-Treasurer, Dr. E. W. Kirby.

The Arlington County Medical Society

Held its annual meeting on December 19 at the Washington Golf and Country Club. The following were elected officers for 1941: Dr. Henry Louis Bastien, President; Dr. Robert H. Detwiler, Vice-President; and Dr. J. R. B. Hutchinson, Secretary-

Treasurer. Dr. Robert Battey Crichton was elective to active membership and Dr. J. Ogle Warfield and Dr. Charles A. Finnigan to associate membership.

James River Medical Society.

Officers of this Society elected for 1941 are: President, Dr. A. C. Whitley, Palmyra; vice-president, Dr. E. B. Nuckols, Cumberland; and secretary-treasurer, Dr. Garland Dyches (re-elected), Dillwyn.

Richmond Academy of Medicine.

Dr. William Branch Porter, new president, announced the following committee appointments when he took office on January 14: *Program*—Drs. William Jordan, James P. Baker, A. Stephens Graham, and James Smith; *Radio*—Drs. Guy Horsley, Douglas Chapman, and B. W. Rawles, Jr.; *Entertainment*—Drs. Ambrose McGee, John Lynch, and John Paul Jones; *Advisory to the Woman's Auxiliary*—Drs. E. H. Williams, William Bickers, and Ernest Alderman; *Publicity*—Drs. Fred Wampler, W. H. Craig, and Ernest Trice; *Advisory to I.V.N.A.*—Drs. M. Pierce Rucker, O. B. Darden, and C. L. Outland.

News Notes

Southeastern Surgical Congress.

The postgraduate surgical assembly of the Southeastern Surgical Congress will be held in Richmond, March 10-12, under the presidency of Dr. Irvin Abell. Dr. Frank Johns, Richmond, is chairman of the local committee on arrangements. Clinics and lectures, covering every branch of surgery, will be given by forty men of national prominence, among them being three from Virginia—Drs. J. M. Emmett, Clifton Forge; Walter B. Martin, Norfolk; and W. L. Peple, Richmond.

For information, write the secretary-treasurer, Dr. B. T. Beasley, 701 Hurt Building, Atlanta, Ga.

Saint Albans Sanatorium.

On January 16, Saint Albans Sanatorium at Radford, completed its 25th year of operation. The Sanatorium was organized by Dr. J. C. King, formerly Superintendent of the Southwestern State Hospital at Marion. During the past twenty-five years, there have been 4,510 new admissions with an average

daily population of forty. James P. King became associated with the Sanatorium in 1930 and Frank A. Strickler in 1937.

Aside from the medical work of the Sanatorium, the property has long been of interest because of its original operation as a boy's school. Professor George H. Miles built the School in 1891 and for six years conducted a preparatory academy. The School's alumni include many illustrious citizens. The impetus given the School by Professor Miles was a considerable one as letters of inquiry are occasionally received by the hospital authorities, although the School closed forty years ago.

At the present time nervous and mental cases and alcoholic patients are treated. The Sanatorium is located in Pulaski County, over-looking the town of Radford and New River.

Medical College of Virginia News.

Dr. Walther Riese reported for work at the college as research associate in psychiatry on January

6th. A grant for Dr. Riese's work here was made by the Rockefeller Foundation of New York.

Dr. R. D. Hughes, assistant professor of biology in the school of pharmacy, has been called to active duty in the navy. Dr. Hughes' wife will carry on his teaching duties while he is away from the college.

Due to the prevalence of influenza the 14th floor of the new college hospital was opened for patients on January 15th. It is expected the entire hospital will be occupied by February 1st.

Lectures scheduled for the spring months at the college are:

February 28—Alpha Omega Alpha Lectureship, Dr. Fuller Albright, Massachusetts General Hospital, Boston, Massachusetts.

March 14—Phi Beta Pi Lectureship, Dr. Walter E. Vest, Chesapeake and Ohio Hospital, Huntington, West Virginia.

April 24-25—Stuart McGuire Lectures, Dr. Alfred Blalock, Vanderbilt University, Nashville, Tennessee.

The annual spring postgraduate clinics will be held in conjunction with the Stuart McGuire lectures.

Dr. William B. Porter professor of medicine, has been elected president of the Richmond Academy of Medicine.

Brown-Sequard Chapter of Alpha Omega Alpha,

Honor Medical Society at the Medical College of Virginia, will hold an initiation on Friday evening, February 28th, at 7 P. M., at the Commonwealth Club. Prior to the initiation, Dr. Fuller Albright, Assistant Professor of Medicine at the Massachusetts General Hospital, will deliver the annual Brown-Sequard lecture at the Baruch Auditorium at 4 P. M. The subject of his lecture will be "Some Clinical Aspects of Metabolic Bone Diseases". Members of the medical profession are invited to this lecture.

Alumni members of the 1932 Brown-Sequard Society, the first class to petition A. O. A., were the first alumni elected to this fraternity and they are as follows: Drs. L. E. Jarrett and W. L. Nalls, Richmond; R. L. Clark, Jr., Jackson, Miss.; H. G. Byrd, Louisa; P. S. Richards, Butler, N. J.; W. Cardwell, Greensboro, N. C.; L. B. Todd, Quinwood, W. Va.; R. C. Cecil, Rainelle, W. Va.; and M. H. Bland, Norfolk. Members of the 1940 class

elected are Drs. Jose Bou Lopez, W. E. Ward and M. J. Hoover, Jr., Richmond; W. E. Vest, Jr., Denver, Col.; A. B. Croom, Philadelphia, Pa.; and A. E. Powell, University of Virginia.

News from University of Virginia, Department of Medicine.

On January 9th, Dr. Byrd S. Leavell spoke before the Fredericksburg Medical Society on the subject of Anemia.

Dr. Oscar Swineford, Jr., participated in the Third Annual Forum on Allergy in Indianapolis. His subject was Asthma and Heart Disease.

Dr. Robert V. Funsten attended the meetings of the American Academy of Orthopedic Surgery in New Orleans from January 12th to 16th. He presented a paper on Experimental Studies in the Use of the U Clamp For Fixation of the Spinous Processes in Fractures of the Spine.

The Jefferson Medical College of Philadelphia.

The William Potter Memorial Lecture was delivered by Henrik Dam, Ph.D., Associate Professor, Biochemical Institute University of Copenhagen, Denmark, on January 10, 1941. His subject was "A Survey of the Present State of Knowledge on Vitamin K".

News from Duke University School of Medicine.

At the beginning of the winter quarter, there were 239 medical students, 66 first year, 65 second year, 65 juniors, and 43 seniors. One hundred and forty pupil nurses were enrolled.

Dr. Laurence H. Snyder, Professor of Medical Genetics at Ohio State University School of Medicine, is giving a series of weekly lectures on Medical Genetics in January, February, and March.

At the meeting of the Duke Medical Society on January 14th, Dr. Tinsley R. Harrison, newly appointed Professor of Medicine at the Bowman Gray School of Medicine of Wake Forest College, spoke on "Hypertension". Dr. Wingate Johnson, Professor of Clinical Medicine at the Bowman Gray School of Medicine of Wake Forest College, discussed the paper.

On November 29th-30th, the Tenth Anniversary of the opening of the School of Medicine and Hospital was celebrated and the new Department of Neuropsychiatry was dedicated. One hundred and

twenty medical alumni and former members of the house staff were present.

At this time the Duke University School of Medicine Alumni Association was organized with the following officers: J. M. Arena, president, R. W. Graves, vice-president, J. L. Callaway, secretary-treasurer, L. D. Baker, corresponding secretary.

The Gill Memorial Eye, Ear and Throat Hospital,

Roanoke, will hold its fifteenth annual Spring Graduate Course, April 7 to 12. There will be courses in ophthalmology, otology, rhinology, laryngology, facio-maxillary surgery, bronchoscopy and esophagoscopy. All lectures, demonstrations and operations will be given at the hospital, and the round table discussions will be held at the Patrick Henry Hotel immediately following luncheon. The class will be limited to fifty.

Members of the faculty are: Drs. Alfred Cowan and Robert A. Groff, Philadelphia; James H. Maxwell, Ann Arbor, Mich.; Paul M. Moore and A. D. Ruedemann, Cleveland, Ohio; Raymond E. Meek, A. B. Reese, C. R. Straatsma and Arno E. Town, New York City; C. Stewart Nash, Rochester, N. Y.; LeRoy A. Schall and T. L. Terry, Boston, Mass.; Warren T. Vaughan, Richmond; and Frank B. Walsh, Baltimore, Md. Resident members are Drs. E. G. Gill and John E. Alexander.

Full information may be received from the Superintendent, Gill Memorial Eye, Ear and Throat Hospital, Box 2467, Roanoke, Va.

Dr. G. W. Skaggs,

Who has practiced medicine with the Clinchfield Coal Corporation at Dante for the past three years, has returned to his home in Dublin and resumed his practice there.

Dr. Henkel M. Price,

Recently on the staff of Pine Camp Hospital, Richmond, has located in Martinsville, where he will be engaged in industrial and general practice.

Dr. Stanley H. Macht,

Of Crewe, returned there recently and opened an office for general practice. He has received an appointment to the staff of the Southside Community Hospital at Farmville, and has been made chairman of the staffs' program committee. Dr. Macht is a member of the class of '39, University of Virginia,

following which he interned at the U. S. Marine Hospital in Norfolk.

Dr. Alex. N. Chaffin,

For sometime located at Galax, is now on the medical staff of Catawba Sanatorium.

National Conference on Medical Service.

The fifteenth annual meeting of the National Conference on Medical Service will be held at the Palmer House, Chicago, on February 16th. Dr. Forrest L. Loveland, Topeka, Kansas, is President and Dr. Harold M. Camp, Monmouth, Illinois, Secretary. Any physician desiring a program may secure it from either of the above officers.

Dr. Herman H. Hines,

Recently of St. Charles, is now Physician to the State Farm, acting in place of Dr. William J. West who is away because of sickness.

Congratulations to Parke, Davis & Company

On seventy-five years of accomplishments! Under the *Miscellaneous Department* in this issue of the MONTHLY is an interesting account of some of their achievements.

One statement not noted in the write-up, however, is the fact that this Company has been advertising in the MONTHLY continuously for over sixty years—a record for constancy. May we continue to work together for the good of the medical profession for many years to come!

Dr. S. K. Livingston,

An alumnus of the University of Virginia, Department of Medicine who has for several years been connected with the Veterans Administration Facility at Hines, Ill., has been transferred to White River Junction, Vermont.

The Red Cross-Harvard Hospital

Is to be set up at an un-named site in southwest England sometime in February, for the study and treatment in England of communicable disease under wartime conditions, and the findings of the staff will be reported to the U. S. Army, Navy and Public Health Service. The hospital will consist of twenty-two buildings of a design developed for modern warfare, and the staff will include seventy-five American doctors, Red Cross nurses and laboratory technicians. Dr. John E. Gordon, professor of preventive medicine and epidemiology in the Harvard Medical School, is to be general director of the combined undertaking.

Syphilis Study.

Charlottesville, Albemarle and Orange Counties are putting on an intensive fight against syphilis and have issued *The Study Bulletin* which is "Devoted to the Fight Against Syphilis". This is chiefly concerned with (1) the finding of new cases of syphilis; (2) the holding of known cases under treatment until they are no longer a menace to the community, and until the maximum benefit from treatment to the individual has been achieved.

Dr. J. Dean Creger,

Recently of St. Paul, has moved to Radford.

Com. Micajah Boland (MC) USN,

Has been transferred from the Naval Training Station at Norfolk to the Receiving Station, Naval Base, Norfolk.

Dr. James N. Williams,

Richmond, has recently been added to the list of Virginia physicians who have passed the American Board of Psychiatry and Neurology. He is now director of the mental hygiene clinic of the State Department of Public Welfare.

Petersburg Hospital Staff.

Officers of the Petersburg Hospital Staff have been re-elected for another term, as follows: President, Dr. Meade Edmunds; Vice-President, Dr. George Reese; Secretary, Dr. Hyman Cantor; and Vice-Secretary Dr. Munford Yates. Dr. Herbert C. Jones was re-named a member of the medical committee and Dr. J. E. Hamner was elected a new member of the chart committee. Others elected were: Dr. Yates, medical section chairman; Dr. W. B. McIlwaine, medical section secretary; Dr. Reese, surgical section chairman; Dr. Cantor surgical section secretary; Dr. Hilmar Schmidt, X-ray section chairman; and Dr. D. D. Willcox, eye, ear, nose and throat section chairman.

Dr. Edwin D. Vaughan

Was recently appointed a member of the membership and classification committee of the Ashland Kiwanis Club.

Married.

Dr. John Warren Montague, Richmond, and Miss Mary Adelaide Walton, Morganton, N. C., January 4. Dr. Montague received his medical degree from the University of Virginia in 1939, and is now a member of the resident house staff of the Medical College of Virginia hospitals.

Dr. W. Calhoun Stirling

Of Washington, D. C., was the guest speaker before the annual meeting of the Tennessee Valley Postgraduate Medical Assembly at Knoxville, Tenn., in October. The title of his paper was "Clinical Significance of Hematuria" and "Sulfathiazole in Infections of the Urinary Tract and in General Septicemia". He also was invited to participate in the symposium on "Malignancies of the Kidney and Ureter" at the annual meeting of the American College of Surgeons which met in Chicago, later that month.

Wanted—

Experienced man as assistant resident; large traumatic and fracture service; American, Class-A school; personal interview; salary commensurate with position; state race, religion, and nationality. Address "Assistant Resident", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

For Sale—

G. E. shock-proof, mounted or bed-side unit x-ray machine of late model F-2. Recently factory inspected and o.k'd. Has been used less than one year. Consists of foot switch, hand timer, fluoroscope, and mobile stand. Cost \$645, but will sell for \$400. Reason for selling—have two machines. Picture sent on request. Dr. W. B. Barton, Stonega, Va. (*Adv.*)

Wanted—

Physician. Preferably young man who has had some experience in psychiatry or who wishes to enter this field; to associate in psychiatric work in nervous and mental private hospital. An attractive position with opportunity if he succeeds in the work. Address BXY care of this JOURNAL.

Obituary Record

Dr. Paul Brandon Barringer,

Prominent physician and ex-president of the Medical Society of Virginia, died at his home in Charlottesville on January 9, after a long illness. He was a native of North Carolina and eighty-three years of age. In 1877, Dr. Barringer received his medical degree from the University of Virginia, and the following year was granted the supplemental de-

gree of doctor of medicine from the University of New York. After several years of practice outside of the State, he was called to the University of Virginia in 1888 to the chair of physiology. Dr. Harringer was chairman of the faculty of the University from 1895 to 1903 and was superintendent of the first hospital building which was completed in 1901, being largely responsible for the raising of funds for this building. In 1907, he left the University to become president of the Virginia Polytechnic Institute where he served until 1912. Returning to Charlottesville, he gave his attention largely to work as a publicist, especially in connection with Negro problems and the agricultural problems of the South. In 1933, Dr. Barringer was elected the second honorary president of the University of Virginia Alumni Association and he was chosen to deliver the centennial address before this association when it celebrated its 100th anniversary in 1938. He was a member of many medical and scientific organizations. Dr. Barringer had been a member of the Medical Society of Virginia for fifty years and served as its president in 1906-7. His wife, four sons, and three daughters survive him.

Dr. Karl Sigismund Blackwell,

Widely known Richmond physician, died December 26, following a heart attack the day before. He was born in Charlottesville in 1879 and graduated from the former University College of Medicine, Richmond, in 1906. Dr. Blackwell began the practice of medicine in Richmond, specializing in diseases of the eye, ear, nose and throat, and had been on the faculty of the Medical College of Virginia since that time, later becoming professor of otolaryngology, a position he held at the time of his death. Dr. Blackwell had taken a prominent part in civic and religious affairs and had served for a number of years as President of the Y. M. C. A. He was a member of Kappa Alpha and Pi Mu fraternities and a past president of the Richmond Academy of Medicine. He had also been a member of the Medical Society of Virginia since 1908 and served as one of its vice-presidents in 1939-40. His wife, two sons and a daughter survive him.

Dr. Prentiss Dupuy Johnston,

Prominent physician of Tazewell, died January 3rd, following a paralytic stroke. He was a native of Goochland Court House and sixty-two years of age. Dr. Johnston graduated from the Medical

College of Virginia in 1906, and, after a few years' practice at Pocahontas, located in Tazewell. He was president of the Tazewell Rotary Club and had also served as chairman of its crippled children's committee. Dr. Johnston was medical examiner for the county draft board during the conscription for the World War, and, upon the operation of the selective service act in October, was named to serve again. He had been a member of the Medical Society of Virginia since 1906. His wife, two daughters and a son survive him. One daughter, Dr. Mary Elizabeth Johnston, had been in partnership with him for the past three years.

Dr. Francis Lee Thurman,

Prominent physician of Buena Vista, died January 19. He was seventy-four years of age and received his medical degree from the University of Virginia in 1894. Before locating in Buena Vista, Dr. Thurman practiced for twenty-three years at Keswick in Albemarle County. He was chairman of the Buena Vista Board of Health, a member of the City Council and the Rotary Club, and a former president of the Rockbridge County Medical Society. Dr. Thurman was an authority on old families and homes in Virginia and wrote many articles on these subjects. He was an ardent sportsman and was for some years secretary-treasurer of the Keswick Hunt Club and at one time was master of hounds. Dr. Thurman joined the Medical Society of Virginia in 1897.

Dr. Daniel Warwick Harmon,

Colonel, M. C., U. S. A., Hot Springs National Park, Ark., died November 8, at the age of sixty. He was a graduate in medicine of the University of Virginia in 1903.

Dr. Franklin Pierce,

Former representative in the General Assembly from Nansemond and Isle of Wight Counties, but for the past twenty years of Norfolk, died January 18, after a long illness. He was eighty-six years of age and a graduate in medicine from the College of Physicians and Surgeons of Baltimore in 1875. A son and daughter survive him.

Dr. Paul Nicholas Leech,

Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, died January 14, at the age of fifty-one.

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1. Dornbush, A. C., Peterson, W. H., and Olson, F. R.: "The Carotene and Vitamin A Content of Market Milks." J.A.M.A., May 4, 1940, pp. 1748-1751.

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SCIENTIFIC BACKGROUND

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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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PERIPHERAL VASCULAR DISEASE IN INDUSTRY.*

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During the past decade a tremendous awakening of interest in the subject of peripheral vascular disease has occurred. A number of physicians are now devoting the major part of their time to the diagnosis and treatment of diseases of the peripheral vessels.

In 1862, Maurice Raynaud published an excellent account of the disease which was named for him; erythromelalgia was reported by Mitchell in 1872; Leo Buerger, in 1908, described thrombo-angiitis obliterans, and arteriosclerotic disease of the peripheral arteries was recognized before these dates. Little, however, in the way of treatment was offered; hence, the lack of general interest in this field.

In the course of this discussion, it is my purpose to try to arouse your interest in the subject of peripheral vascular diseases and to consider these diseases in a practical manner. I hope that this discussion will be of some value when applied to the field of industrial medicine. What role, for example, do climate, occupation, and working conditions play in the cause and prognosis of peripheral vascular diseases? If a subject with uncomplicated Raynaud's disease living in a cold climate could move to a warm climate where it was perpetually summer, the disease would tend to disappear or become so mild that it would not be of clinical importance. If a subject with pneumatic hammer disease could become an office clerk, the disease would also tend to disappear. If a mail carrier with thrombo-angiitis obliterans of the lower extremities, who has to walk several miles a day in all types of weather, could sit at the window in the post office and sell stamps, the outlook from the standpoint of amputation would be greatly improved. Occupation and the type of

work which an individual carries out are bound to be important factors in determining the outlook in cases of occlusive arterial disease, particularly if the disease involves the lower extremities. It is extremely important for patients with circulatory insufficiency in the extremities to have the type of work which will permit them to make a living and, at the same time, permit them to live within the limits of the blood supply of the extremities; otherwise, serious complications are certain to result. This is particularly true in cases of thrombo-angiitis obliterans.

The chief problem concerning peripheral vascular disease should not be the diagnosis and treatment but rather the prevention of complications which incapacitate the patient and frequently result in amputation of the involved extremity. Most of the amputations, for example, which are performed in cases of thrombo-angiitis obliterans could undoubtedly be avoided by early diagnosis and particularly by the education of the patient regarding the nature of his disease. The general practitioner and industrial physicians will prove to be the patient's first line of defense.

Fortunately, diseases affecting the blood vessels of the extremities are easy to recognize and study. They are exposed to the eye and to the fingers, and are susceptible to accurate determination by functional studies. Therefore, progress in the treatment of these diseases has been remarkable and rapid. Knowledge of a working classification of peripheral vascular diseases and their differential diagnosis is necessary before one can institute intelligent treatment.

Diseases of the peripheral arteries of the extremities fall into two large groups, namely, "functional" and "organic".

Of the vasomotor, or functional, group of diseases there are two main types: (1) the vasoconstricting

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Lecture was illustrated with numerous case reports which have been omitted from this article.

type, which is accompanied either by the multiple-phase color reaction (Raynaud's disease) or by the one-phase color reaction (acrocyanosis), dead fingers and local syncope; and (2) the vasodilating type, of which erythromelalgia is a well-known example. This includes "erythromelalgia of the head, histamine cephalgia".

In the organic group, there are eight main divisions: (1) thrombo-angiitis obliterans (Buerger's disease); (2) arteriosclerosis obliterans; (3) arteriovenous fistula (congenital and acquired); (4) simple thrombosis and embolism; (5) aneurysm with or without thrombosis; (6) cervical ribs and scalenus anticus syndrome; (7) pneumatic hammer disease, and (8) arteritis of the temporal vessels.

From our experience at the Mayo Clinic, one can say that of functional disturbances, 38 per cent represent Raynaud's disease, 49 per cent represent other forms of primary and secondary vasospastic disorders, while only 13 per cent represent vasodilating disorders, of which 4 per cent may be classified as erythromelalgia. In the organic group of diseases, 46 per cent represent arteriosclerosis obliterans. Forty-seven per cent represent thrombo-angiitis obliterans and 7 per cent represent the other types of occlusive arterial diseases. This illustrates the relative importance of these diseases. In our present state of knowledge, we are unable to classify accurately about 4 per cent of peripheral vascular disease (Brown).

Sufficient information to allow a diagnosis to be made usually will be obtained by the following: eliciting a history of signs and symptoms of circulatory disturbances in the extremities; examination of the hands and feet with reference to changes in temperature, trophic changes, and the presence or absence of rubor when the extremity is dependent, or of blanching when the extremity is elevated; palpation of the brachial, radial and ulnar arteries, and palpation of the femoral, popliteal, dorsalis pedis and posterior tibial arteries. The difficulty in diagnosing localized vascular disease of the extremities is in distinguishing the vasomotor or functional type from the organic type, and particularly in recognizing these lesions when they are associated.

SKIN TEMPERATURES OF THE EXTREMITIES IN PERIPHERAL VASCULAR DISEASES

In order to appreciate the role which vasospasm plays in the production of the signs and symptoms

encountered in cases of peripheral vascular diseases, one should have clearly in mind the role which vasoconstriction plays in the normal individual. Furthermore, it is important to differentiate vasospasm and normal vasoconstriction. A great deal of confusion has arisen in the minds of the medical profession regarding the use of sympathectomy in the treatment of peripheral vascular disease because many surgeons and clinicians have felt that, following sympathectomy, one only gets rid of normal vasoconstriction, and in many instances elimination of vasoconstriction has not been complete. I use the term "vasospasm" to indicate spasm in the vessels, which is superimposed on the normal degree of vasoconstriction that is present in all blood vessels. The degree of vasoconstriction varies in different parts of the body and there is a definite vasomotor gradient from the face to the hands and feet. The minimal degree of vasoconstriction is in the face, with an increase in the hands and feet.

The difference between normal vasoconstriction and vasospasm can readily be demonstrated if one takes, for example, a normal individual, a subject with thrombo-angiitis obliterans, and one with Raynaud's disease. If these three subjects are placed under controlled environmental conditions in a temperature of 68°F. (20°C.) and a humidity of 40 per cent, and if the surface temperatures of the various digits of both upper and lower extremities are recorded by means of thermocouples, and if the environmental temperature is gradually increased to 90°F. (32.3°C.), a striking difference in the manner in which vasodilatation occurs in the hands and feet of these subjects will be evident.

In the environment of 68°F. (20°C.), the temperature of the toes of all three subjects will approximate that of the room temperature, and the temperature of the fingers may also approximate the room temperature.

When the environmental temperature is gradually elevated, keeping the humidity constant, by the time the temperature reaches 79°F. (26.0°C.) complete vasodilatation will occur in the hands, and frequently in the feet of the normal individual, whereas, it will be necessary to continue to elevate the environmental temperature to approximately 83° to 84°F. (28.5° to 29.0°C.) before vasodilatation will occur in the feet of the subject with thrombo-angiitis obliterans, and the room temperature will have to be further elevated to approximately 85° to 86° F. before com-

plete vasodilatation will occur in the digits of the subject with Raynaud's disease.

In all three subjects, vasodilatation occurs, first in the hands and then in the feet. In cases of Raynaud's disease I have frequently noted that the temperature of the fingers was below that of the toes, and yet vasodilatation invariably occurs more rapidly and at a lower environmental temperature level than in the toes. It is obvious from this simple observation that the degree of vasoconstriction is greater in the subjects with Raynaud's disease and thrombo-angiitis obliterans, respectively, than it is in the normal subject. This difference between the environmental temperatures at which complete vasodilatation occurs in the normal subject, in the subject with thrombo-angiitis obliterans and in the subject with Raynaud's disease is an index of the degree of the superimposed vasospasm which is present in cases of these two peripheral vascular diseases. Following sympathectomy, normal vasoconstriction and vasospasm are eliminated from the denervated extremities. However, there are many skeptics who feel that sympathectomy is of no importance in the treatment of vasospasm in peripheral vascular disease. Our clinical experience over many years at the clinic emphatically contradicts this line of thought.

RAYNAUD'S DISEASE

This disease affects young women in more than 95 per cent of instances. Because it is caused by vasospasm it is completely relieved, if uncomplicated, by sympathetic ganglionectomy. This treatment is used in severe cases. The first symptoms of the condition generally appear in winter. They consist of changes in color, usually of all of the fingers or toes. The involvement is symmetrical. The changes in color are of the so-called three-phase type. The patients frequently note that the digits become white and "dead" with exposure to cold, and when warmed they become red, or often blue. These changes in color frequently are excited by emotional disturbances. The peripheral arteries of the involved extremities always pulsate normally. Hence, the pain of intermittent claudication never occurs in Raynaud's disease. Gangrene, when present in advanced cases, is limited to the cutaneous surface, in contradistinction to the mass gangrene which sometimes occurs in thrombo-angiitis obliterans.

In mild cases of Raynaud's disease the patients usually do not require treatment. The patients should

refrain from exposure to cold, and are better if they spend the winter in a warm climate. Sympathectomy is the present treatment of choice in cases in which the disease is advanced.

ERYTHROMELALGIA

Erythromelalgia occurs approximately once in every 200 cases of peripheral vascular disease. It is the rarest of peripheral vascular diseases and will be considered only briefly. It manifests itself chiefly by burning pain in the feet. Elevation of the feet tends to produce relief. Arterial pulsations are normal or exaggerated and the surface temperature of the involved extremity is always above normal. Primary erythromelalgia must not be confused with pseudo-erythromelalgia. The latter condition is always associated with some degree, and frequently with an advanced degree, of arteriosclerosis. Patients complain of subjective burning pain in the feet but there is no actual rise in surface temperature. No specific treatment is available for this condition.

THROMBO-ANGIITIS OBLITERANS

Thrombo-angiitis obliterans is a chronic disease of the arteries and veins which is largely confined to the extremities and occurs predominantly among men between the ages of twenty-five and fifty years. Approximately 98 per cent of the subjects affected are males. The reason of this is not clear. The disease is characterized by a chronic relapsing lesion of the vessels, and occlusion and collateral circulation struggle for supremacy. The element of time is most important in this struggle, since on this rests preservation of the part. If the intervals between relapses are short and if the time for adequate collateral circulation is brief, trophic changes and gangrene are likely to ensue. Conversely, if the intervals of time between relapses are long, collateral circulation becomes adequate and sufficient supply of blood to the distal parts is assured. The first consideration regarding prognosis is the frequency of exacerbation of the disease. Experience in a large number of cases of thrombo-angiitis obliterans shows clearly that a high percentage of bad prognoses (regarding amputation) is not justified. Up to January 1, 1940, 1,091 cases of thrombo-angiitis obliterans had been observed at the Mayo Clinic. These patients had a total of 230 amputations (either a digit, a foot, or leg). This does not include amputations which were performed prior to admissions, nor does it include those performed after patients were dismissed from the clinic.

This disease has been observed among people of practically every nationality.

The cause of thrombo-angiitis obliterans is as yet unknown. The excessive use of tobacco seems to aggravate the disease, but has not been identified as the causative agent. Buerger reproduced the lesion in human beings by implants of segments of diseased veins. Dorsey and I reproduced the lesions in animals by injection of organisms isolated from acutely inflamed veins of man and also by implantation, adjacent to the vessels, of segments of acutely inflamed veins of man.

The pain of intermittent claudication is the predominating symptom in cases of thrombo-angiitis obliterans. Palpation of the brachial, radial and ulnar arteries and of the femoral, popliteal, dorsalis pedis and posterior tibial arteries invariably will reveal that one or more of these arteries is occluded. If circulatory insufficiency is present in an extremity, regardless of the nature of the occlusive process, rubor occurs with dependency and there is excessive pallor with elevation.

Superficial phlebitis of the migratory type is present in about 30 per cent of cases of thrombo-angiitis obliterans. It rarely, if ever, occurs in cases of arteriosclerosis. Changes in color, of the one-phase or three-phase type, are present in the involved extremities in 30 per cent of cases of thrombo-angiitis obliterans. It is for this reason that one is likely to confuse Raynaud's disease with thrombo-angiitis obliterans. Changes in color, of the three-phase type, are always present in Raynaud's disease, and without these changes in color one could not make a diagnosis of Raynaud's disease; on the other hand, vasospastic disturbances of the three-phase type, secondary to the occlusive vascular process, occur in 30 per cent of cases of thrombo-angiitis obliterans. In cases of thrombo-angiitis obliterans pulsations invariably are absent in one or more of the usual palpable arteries of the extremities, whereas in Raynaud's disease pulsations in the peripheral arteries are normal.

ARTERIOSCLEROSIS OBLITERANS

In more than 90 per cent of cases arteriosclerosis with occlusion affects men who are more than fifty-five years of age, and since vasospasm is rarely, if ever, an element in the condition, it is not affected by sympathetic ganglionectomy. Arteriosclerosis, with or without arterial occlusion, usually affects men who

are more than fifty-five years of age, in contradistinction to thrombo-angiitis obliterans which usually affects young men. Pulsations of the peripheral arteries in arteriosclerotic disease of the extremities are usually diminished, and frequently pulsations are absent in the popliteal, dorsalis pedis and posterior tibial arteries. Occasionally the femoral artery is occluded, but it is rare to find a radial, ulnar or brachial artery occluded. The fundamental pathologic process in the arteries is the same, irrespective of the presence or absence of diabetes mellitus.

Intermittent claudication is the most significant symptom in the diagnosis of occlusive arterial disease of the extremities. It is a symptom and not a disease. It manifests itself following exercise as a cramp-like pain or as a feeling of distress in the upper or lower extremities. It frequently is noted in thrombo-angiitis obliterans, and may affect the upper extremities. It is observed less frequently in arteriosclerotic disease. In the lower extremities, the distress is usually confined to a single digit, to the arch of the foot, or to the calf of the leg. In the upper extremities, a digit, the entire hand or the forearm may be the site of the distress. It is the result of an insufficient supply of arterial blood to the distal parts. It invariably comes on after exercise and is relieved by rest. Many patients can state the number of steps necessary for the production of pain and the period of rest required for relief. More than 50 per cent of patients who have occlusive vascular disease of the extremities give a history of intermittent claudication. Since intermittent claudication never occurs in subjects with Raynaud's disease or erythromelalgia, the symptom practically means either arteriosclerosis with occlusion or thrombo-angiitis obliterans. In the presence of intermittent claudication, the brachial, radial and ulnar arteries and the femoral, popliteal, dorsalis pedis and posterior tibial arteries should be examined to determine whether pulsations are present or absent.

The roentgenographic demonstration of calcification in the arteries of the extremities does not necessarily mean that the patient has primary arteriosclerotic disease, for in many cases in which thrombo-angiitis obliterans has developed earlier in life there may be evidence of calcification of the peripheral arteries in the fifth or sixth decade.

The treatment of arteriosclerotic disease, with occlusion and thrombo-angiitis obliterans, consists first in prophylactic measures. These include avoidance

of trauma and of exposure to excessive cold, the wearing of proper shoes, and particularly the proper surgical handling of all ingrown toe nails. Increasing knowledge, by members of the medical profession, of the danger of operating on affected digits to which the supply of blood is already diminished perhaps will accomplish greater changes in prognosis than any other single factor. A red, cold foot, which is invariably seen in cases of circulatory insufficiency, attributable either to arteriosclerosis or thrombo-angiitis obliterans, must be distinguished from a red warm foot that is secondary to some local infection around the nails or digits. The measures of second importance are applied to increase the circulation in the extremities. Postural exercises, contrast baths, radiant heat, tissue extract and typhoid vaccine given intravenously, constitute the important medical measures. Roth and Barker have shown that intramuscular injection of pancreatic tissue extract (insulin free) given in doses of 3 c.c. enables many subjects with intermittent claudication to walk two to three times as far as before, without development of the usual distress. The exact way in which the tissue extract acts is not clear. From the surgical standpoint, in selected cases of thrombo-angiitis obliterans, sympathetic ganglionectomy usually gives satisfactory results. The effectiveness of this procedure, however, rests on the proper selection of cases.

ARTERIOVENOUS FISTULA

An arteriovenous fistula represents a short circuit in the blood flow from an artery to a vein. Arterial blood flows from the artery, through the fistula, to the vein without flowing through the capillary bed. The fistula may be acquired or congenital. No difficulty should be experienced in the diagnosis of acquired arteriovenous fistula. There is always a history of injury, generally a puncture or a bullet wound. There is an increase in the surface temperature of the involved extremity and a bruit and thrill can invariably be elicited. The important points to remember in the diagnosis of congenital arteriovenous fistula are the increase in size and length of the involved extremity, the increase in surface temperature, and the occasional occurrence of bruits and thrills. The diagnosis can be established by removing blood under oil from one of the regional veins and studying the oxygen content. In arteriovenous fistula, either acquired or congenital, there is a high admixture of arterial blood, either in the regional or deep veins.

If one compares a sample of blood removed from one of these veins with blood removed in a similar manner from the opposite extremity, the difference in color of the specimens usually is sufficient to establish the diagnosis. Bright red blood invariably is found in the regional veins of the involved extremity, whereas dark red blood is found in the veins of the normal extremity. Arteriography now offers additional means of visualizing arteriovenous fistulas. The treatment of acquired arteriovenous fistula is always surgical. Surgical treatment also can be frequently carried out successfully in cases of congenital arteriovenous fistula. This should not be attempted until an arteriographic study has been made.

THROMBOSIS AND EMBOLISM

Simple thrombosis and arterial emboli in extremities are observed frequently and are not always easy to diagnose correctly. Simple thrombosis occurs more frequently among patients who have arteriosclerotic disease than among those of any other group. Frequently, it is difficult to distinguish simple thrombosis, for example, in the popliteal artery from an embolus. Patients usually complain of sudden pain in the popliteal space, with coldness and numbness of the leg, and it is often difficult to determine whether this is due to an embolus or to simple thrombosis of the artery. In elderly people, in the absence of auricular fibrillation or endocarditis, it is relatively safe to assume that simple thrombosis of the artery has taken place. Embolectomy in the arteriosclerotic group of cases is not a very satisfactory procedure. The extremity should be kept warm, but care taken that the skin is not burned with the use of hot water bottles. Morphine may be necessary for relief of pain. If possible, place the patient in an environmental temperature of 85°F., on a Sanders' bed until improvement in collateral circulation occurs. Amputation frequently is necessary. If embolectomy is carried out, heparin should be given intravenously for several days following the operation, so as to prevent the recurrence of the formation of a thrombus in the artery.

ANEURYSMS WITH OR WITHOUT THROMBOSIS

Aneurysms with or without thromboses are usually easy to diagnose and invariably require surgical treatment. Lesions of this character occur more frequently in the lower than in the upper extremities. Syphilis and arteriosclerosis seem to be the chief causative factors. In our experience at the clinic,

at least 70 per cent of the aneurysms involving the aorta are associated with syphilis, whereas, syphilis plays little or no role in the production of intracranial aneurysms. Congenital defects in the musculature of the arterial wall seem to account for practically all of the intracranial aneurysms which we have observed but are seldom factors in the production of aneurysms occurring in the arteries of the extremities.

CERVICAL RIB AND SCALENUS ANTICUS SYNDROME

Vascular disorders of the upper extremities may be caused by cervical ribs producing mechanical compression of the vessels in the supraclavicular fossa or such disorders may be associated with the scalenus anticus syndrome. The signs and symptoms are essentially the same in both conditions. Movements of the head, neck and shoulder girdle produce undue pressure on the brachial plexus and subclavian vessels. The symptoms of compression of the brachial plexus and subclavian artery are usually pain, atrophy, numbness, or circulatory changes. Pain may be sharp and lancinating, or only of a dull character. The pain usually follows the course of the nerves. Circulatory symptoms are rarely severe but they may manifest themselves in a dusky hue of the arm and hand as compared with the color of the opposite upper extremity. Gangrene may occur, involving one or more fingers. This usually is accompanied by obliteration of either the ulnar or radial artery, or both. Diminution in volume of the pulse on the affected side with noticeable decrease in surface temperature, associated with numbness and coldness, is almost invariably present. The surgical indications for relief of symptoms of cervical ribs and those of the scalenus anticus syndrome are the same. The operation which has proved of the greatest value is one described by Adson, which consists in either removal of the cervical rib or resection of scalenus anticus muscle.

PNEUMATIC HAMMER DISEASE

This is a vasospastic disturbance of the hands, usually affecting stone cutters. Cottingham gave the first description of this syndrome in this country, in 1917. Most stone cutters who use a pneumatic hammer have a disturbance of the circulation of the hands. It consist of blanching and numbness of certain fingers when they are exposed to low temperatures. The disturbance may simulate that of Raynaud's disease but the history, sex, lack of involve-

ment of the feet, and the practical absence of trophic changes, serve to distinguish it from Raynaud's disease. The fourth and fifth fingers are the ones in which the vasospastic disturbance usually manifests itself first because they are the fingers which are nearest to the cutting end of the chisel and are usually pressed closely against it in order to guide it. Aside from the vasospastic disturbances, cutaneous calluses and changes in the muscles and joints have been reported among workers who use air-driven tools. Massive gangrene does not occur in pneumatic hammer disease. Trophic changes are relatively rare. The disease tends to run a benign course.

TEMPORAL ARTERITIS

This is a non-fatal disease which is characterized by periarteritis, arteritis of the temporal vessels, and painful tender regions over the scalp. It is accompanied by headache, general malaise and lassitude, weakness, fever, night sweats, anorexia, loss of weight, anemia, and mild leukocytosis. It generally affects elderly persons. The immediate prognosis is good.

MECHANICAL DEVICES IN THE TREATMENT OF PERIPHERAL VASCULAR DISEASE

In the mechanical age in which we now live, it seems natural that mechanically minded physicians should, sooner or later, resort to the employment of mechanical devices in the treatment of peripheral vascular disease. The pavex machine (intermittent suction and pressure apparatus), the intermittent venous occlusion apparatus sponsored by Collens-Wilensky and the Sanders' bed are illustrative examples. They are popular mechanical devices which are now in use for the treatment of peripheral vascular disorders. Our experience with the pavex machine has been very disappointing. I do not feel that the circulation in the extremities is ever improved by the use of this apparatus. The same statement holds true for the intermittent occlusive apparatus. The claims which have been made for these mechanical devices have been greatly exaggerated, in my opinion, and the improvement which has been attributed to their use actually has been due to other factors which have not been appreciated fully by clinicians. The Sanders' bed is an oscillating bed which permits the patient to take passive, postural exercises for an indefinite period of time without any effort on the part of the patient. However, in order to obtain any satisfactory results with the use of the bed, the patient

should be kept in an environmental temperature of approximately 85° to 87°F. The reason for this statement is obvious when one recalls the fact that vasospasm disappears from the peripheral vessels when an individual is exposed to this temperature. With the tilting of the bed, the patient derives the same benefit as he would if he were taking continuous postural exercises. This mechanical device can be used in the home as well as in a hospital; it is simple in its construction and can be used for older people in cases in which the use of the pavex machine and intermittent occlusive apparatus would be contraindicated.

DISEASES OF THE VEINS

From a practical standpoint, diseases of the veins fall into three large groups: (1) thrombophlebitis; (2) varicose veins, and (3) congenital venous anomalies, which frequently are associated with arteriovenous fistula. Thrombophlebitis may be a superficial migrating type which one often sees associated with thrombo-angiitis obliterans or it may be of the deep type which often follows surgical operations. No specific treatment has been brought forth for thrombophlebitis. Thrombophlebitis is one of the most frequent and troublesome complications encountered following abdominal operations. It invariably involves the lower extremities and is usually confined to one leg although occasionally both may be involved. It manifests itself clinically with pain, swelling and fever. The initial treatment should consist of elevation of the extremity to combat the edema and the application of warm, moist packs for two or three days or until the pain subsides. Usually, this simple treatment is all that is needed for the disease runs a self-limited course and within a week or ten days the swelling completely subsides and nature seems to develop an adequate venous collateral return from the involved extremity but adequate only with the patient in a horizontal position. The second stage of the treatment is directed toward combating edema when the patient is out of bed and attempting to walk. This is best accomplished with the use of a Para rubber bandage. A white cotton stocking should be worn on the involved extremity and then the ex-

tr extremity should be wrapped in a Para rubber bandage which should be started at the instep and wrapped in a spiral manner to the knee. This bandage should be changed every two or three hours until the patient is accustomed to wearing it, and then the bandage should be removed and reapplied two or three times a day. If the bandage is properly applied and intelligently worn for a period of four to six weeks, an adequate venous collateral circulation will develop and then the bandage can be discarded. It is a crime to have any patient go through life with residual edema which has been inadequately treated, as a result of thrombophlebitis following operation. Ace bandages and cloth bandages I believe are inadequate to prevent edema.

From an anatomic standpoint, venous return from the lower extremity is accomplished through the greater and lesser saphenous systems and deep system of veins. The superficial and deep veins are connected by communicating veins. These venous systems are equipped with valves. From a clinical standpoint, one is interested only in whether these three systems of veins are competent or incompetent; if they are incompetent, what is to be done? Of the various systems, the greater saphenous is the most important from a clinical standpoint, as it is the most frequently involved. If the greater saphenous system is incompetent, treatment should consist first in ligation of the vein at the fossa ovalis, as near the femoral vein as possible. An appropriate sclerosing solution (usually a 5 per cent solution of sodium morrhuate) is then injected into the distal segment. This is the best method for preventing recurrence of varicose veins. Appropriate treatment becomes relatively simple if one only keeps in mind the physiologic nature of the problem in question.

Venous anomalies are much more frequently encountered than the medical profession realizes. These anomalies can be treated in very much the same manner as ordinary varicose veins. The same sclerosing solutions can be employed but one must keep in mind the fact that these anomalies are frequently secondary to congenital arteriovenous fistulas and the varices will invariably recur unless the fistulas are successfully treated at the same time.

MATERNAL DEATHS IN VIRGINIA.*

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Dr. Howard W. Haggard, in one of his delightful books, makes the statement that the care a people gives to its women is a measure of its civilization. If that be true, Virginia is neither the most nor the least civilized State in the Union, North Dakota ranking first and South Carolina last. The rank of the various states in reference to maternal mortality is shown in the table taken from the chairman's address to the section on Obstetrics and Gynecology of the American Medical Association last June. You

cent improvement in the two-year period, 1936 to 1938, are proud of the fact that they did not accept any of the Sheppard Towner money. The maternal mortality in the State of Virginia for the past ten years is shown in Figure 2. There was a reduction of 9 per cent in the period 1936-1938 covered in the preceding table. The Maternal Welfare Committee of the Medical Society of Virginia believes that their campaign of education, especially the refresher courses conducted by Dr. M. E. Lapham, was a factor.

FIGURE 1.
MATERNAL DEATHS PER 10,000 LIVE BIRTHS

	1938	1936		1938	1936
North Dakota	24	43	Idaho	41	44
Connecticut	26	41	Kansas	41	57
Minnesota	28	42	Kentucky	42	56
Rhode Island	28	40	Oklahoma	42	62
Wisconsin	29	42	Colorado	45	71
			Maine	46	51
Utah	30	44	Arizona	48	91
Nevada	32	56			
Wyoming	32	50			
California	33	47			
Iowa	33	46	North Carolina	53	66
Montana	33	55	Virginia	53	58
Washington	33	52	Arkansas	55	76
Illinois	34	45	Delaware	56	71
Nebraska	35	50	District of Co-		
Oregon	35	54	lumbia	56	69
South Dakota	36	46	Tennessee	56	70
Indiana	37	48	Texas	56	69
Michigan	37	52	New Mexico	57	74
New Jersey	37	40	Louisiana	59	87
Vermont	37	50	Mississippi	59	69
Maryland	38	47			
New Hampshire	38	48			
New York	38	49	Georgia	67	82
Ohio	38	50	Alabama	68	74
Massachusetts	39	49			
Missouri	39	61			
Pennsylvania	39	52	Florida	75	81
West Virginia	39	53	South Carolina	79	90

will notice that there has been considerable improvement over the whole country. The politicians will probably claim that the Sheppard Towner bill was responsible, but the folk in Connecticut, which has next to the lowest maternal mortality and a 36 per

Be that as it may, the Maternal Health Committee, which is the new name for the Maternal Welfare Committee, is not satisfied with conditions that pertain to maternal health. The committee is approaching the problem from two angles. It is endeavoring to have established maternal centers all over the State, and, secondly, it is attempting to review every case of maternal death. Figure 3 shows the distribution of the clinics in 1936 and in 1940. There were nine prenatal clinics in 1936 and eighty-nine at present. The clinics are established upon request of the local medical society. The State Board of Health furnishes the nurses and the equipment and the local medical society the medical attention. The Maternal Health Committee would like very much to see clinics in those counties not represented on this map.

However, it is the second aspect of the work of the Committee on Maternal Health to which I wish to direct your attention this afternoon. With the co-operation of the State Board of Health the pertinent facts of every maternal death are obtained and are studied by each member of the committee. The study is entirely impersonal and no one except the field worker knows who the doctor or midwife is or even what hospital is involved. As an illustration, one work sheet, No. 14-C, was taken at random from the files. The information from the death certificate shows this to be an urban death which took place in a hospital. The patient was colored, aged twenty-five, and she lived in the country. The cause of death was eclampsia (intrapartum) with terminal pulmonary edema. She was attended by a doctor and there was no autopsy. Information from the birth certificate shows the date of birth, that the

*Read as a part of the Symposium on Obstetrics and Gynecology at the University of Virginia, November 8, 1940.

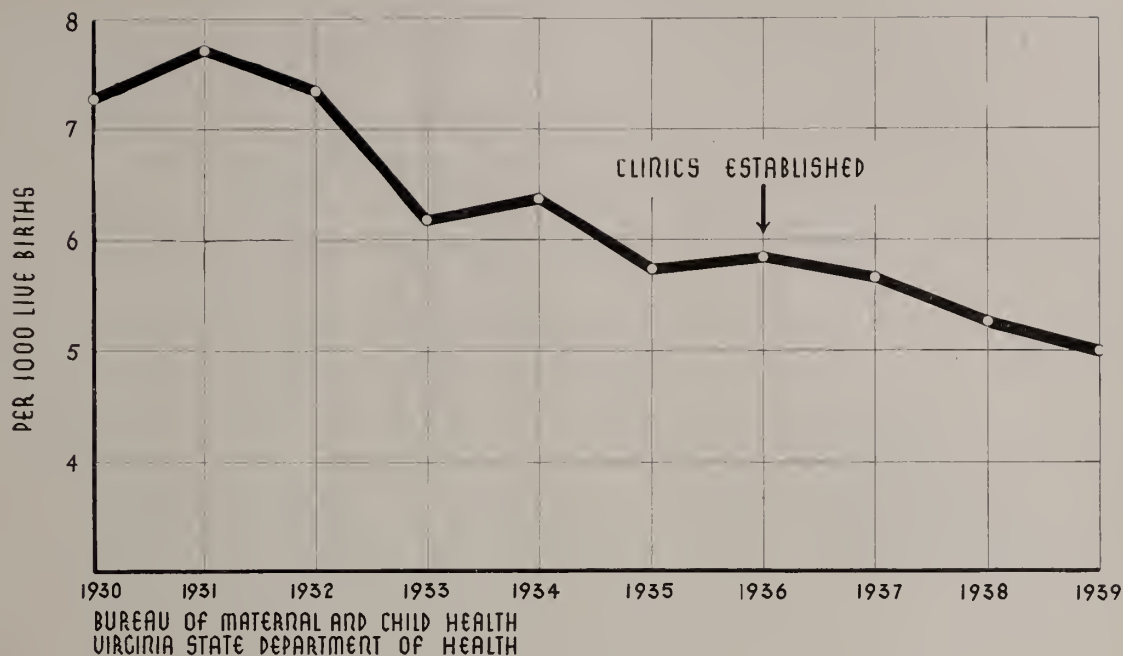


Fig. 2.—Maternal mortality in the State of Virginia for the past ten years.

baby was full term and born alive in a hospital and was the first born child of this mother. Additional information shows that this woman died eighteen hours after delivery. She first consulted a physician in the seventh month of pregnancy. The only other physicians she saw were those on the hospital staff. A Wassermann test was negative in her seventh month of pregnancy and there were no complications during pregnancy. She was given $5/8$ gr. of morphine and $1\frac{1}{2}$ grs. of seconal before admission to the hospital, and 3 grs. of nembutal after admission. Delivery was uncomplicated except for convulsions. There was a perineal laceration which was repaired. Fifteen hours after delivery patient had a circulatory collapse and pulmonary edema. This case was put down as having inadequate prenatal care. The story of the case as told by the field worker is as follows:

"Private Physician: This patient was first seen by the private physician during the seventh month of pregnancy for routine prenatal care. On that visit, the pregnancy was progressing normally and her general condition seemed good. Blood pressure was 120/80 and Wassermann was negative. She returned at intervals of two weeks for prenatal care. One month after the first visit, her blood pressure was elevated to 140/90 and there was a slight trace of albumin in the urine. Bed rest, a low salt and pork-

free diet was advised. She was instructed to return at weekly intervals for close observation.

"She was next seen at home, three weeks later, in early labor with a blood pressure of 200/130 and a history of severe headache and edema of the lower extremities for about a week. She had not returned for prenatal care during the last three weeks, as advised. Morphine grs. $1/4$ and seconal grs. $1\frac{1}{2}$ were given soon after physician's arrival. About twelve hours later she had a generalized convulsion, which was followed after forty minutes by another convulsion. She was then given morphine grs. $1/4$, and 20 cc. of 10 per cent magnesium sulphate solution intravenously, and referred to the hospital.

"Midwife: The midwife was first called to see the patient at onset of labor. Upon her arrival, she found the patient in labor and with marked edema of lower extremities. The physician was called immediately.

"Family: Information from physician and midwife confirmed by family. No additional information.

"Hospital: The patient was admitted to the hospital about eighteen hours after she was first seen by the private physician, six hours after the first convulsion. She was found to have a term pregnancy, not definitely in labor, drowsy, but easily aroused. Blood pressure 180/120, pulse 90. Treatment on admission consisted of 500 cc. of 10 per cent glucose

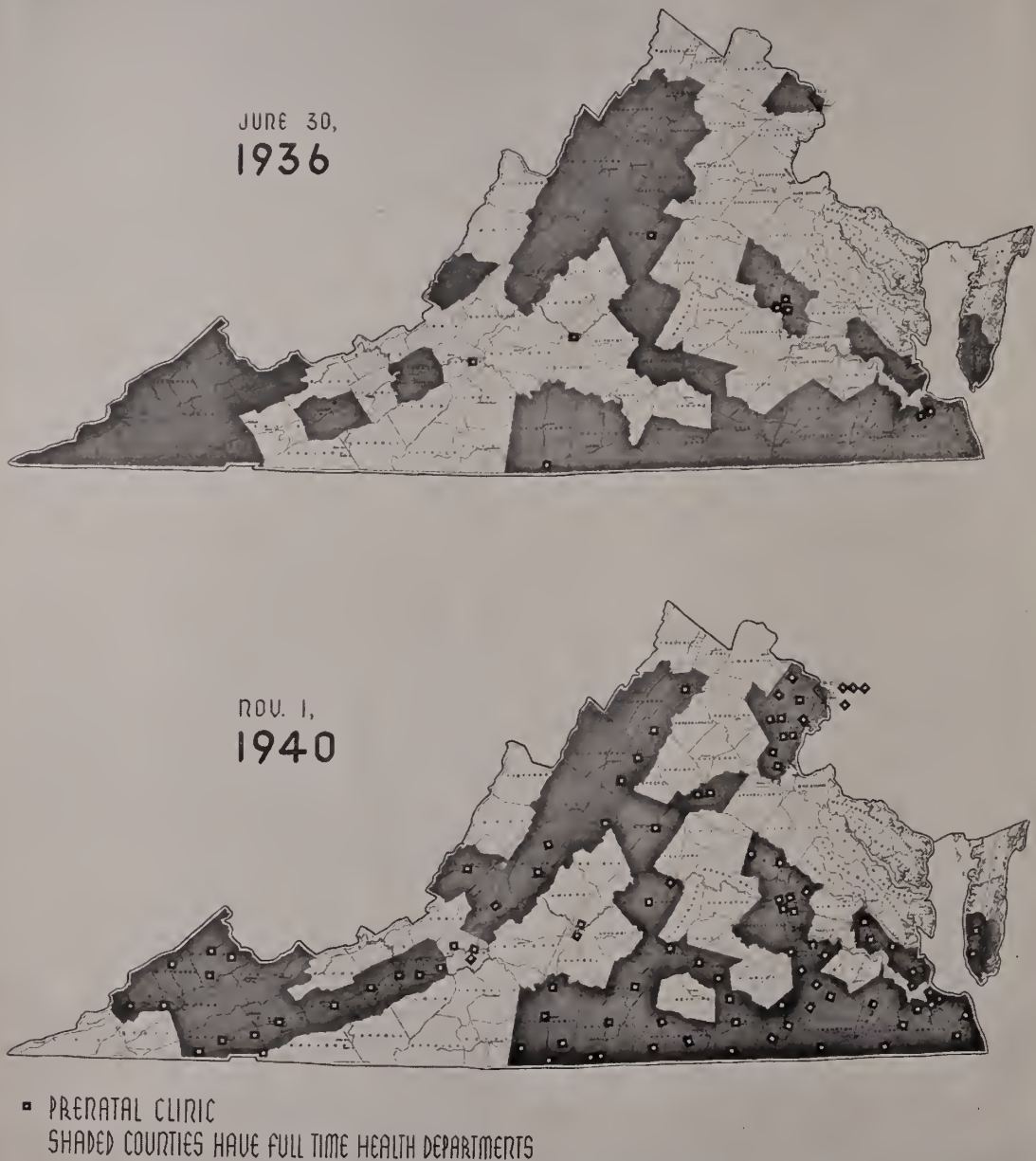


Fig. 3.—Distribution of clinics.

solution in distilled water, to which had been added 80 cc. of molar sodium lactate solution, and 4 cc. (grs. 3) of digifolin intravenously and nembutal grs. 3, digitalis grs. 3 by mouth. Sweetened fruit juices were given at frequent intervals as soon as patient was able to take them.

"Seven hours after admission, definite uterine con-

tractions were occurring every five to eight minutes. A sterile pelvic examination revealed the pelvic measurements to be within normal limits, and the cervix 4 cm. dilated. Membranes were ruptured artificially to improve labor. Labor progressed slowly but normally, and nembutal grs. 3 was given for sedation, in addition to the medication on admission. At 7:00

P. M. on July 1, thirty hours after admission, she was delivered spontaneously of a living child, weighing eight pounds twelve ounces.

"The blood pressure following delivery remained around 190/160, and the degree of drowsiness continued to increase until fifteen hours postpartum, when the blood pressure dropped to 140/120. She then became cold and clammy with Cheyne-Stokes respiration. Five hundred cc. of 10 per cent glucose in distilled water were given and the BP soon rose to 180/140 with considerable improvement in respiration. However, four hours later she developed a massive pulmonary edema and died at 12:30 P. M. on July 2, eighteen hours postpartum. Following the onset of pulmonary edema, she was given 4 cc. (grs. 3) of digifolin intravenously."

These work sheets are mailed in groups of twenty-five around to the individual members of the committee who study them, make notes and mail them on to the next member. When the sheets get back to the State Board of Health they are coded and put on punch cards which will be available for statistical study. To date 125 cases have gone through the mill or are in transit. These are too few to treat statistically but I thought it might be interesting to review them at this time. The following are my own impressions and are, therefore, unofficial. I wish I could give you the opinion of the committee, but the committee has not met for final action on the cases.

Some of the cases, I am sure, will be classified as medical or surgical deaths and not as obstetrical at all. Several were pneumonia deaths, the pneumonia starting antepartum, and the pregnancy was just an added burden. One, I recall, was an ectopic, who died after an operation for pelvic inflammation one month after her first discharge from the hospital. Whether this was an obstetrical or a gynecological death is a question. The great snow undoubtedly played a part in our mortality for 1940, as several women who died could not be reached by doctor or midwife.

Figure 4 shows the place of residence of all the fatal cases since December, 1939. The black belt and the mountainous districts are well represented, which fits in with the growing belief that maternal mortality is as much an economic problem as it is a medical one. Figure 5 shows the causes of death as given on the death certificates. As you see, there were forty cases of toxemia of pregnancy. Even if the fifteen abortion deaths and the three from septicemia be added to the twenty septic deaths, the septic deaths would still not equal the number of toxic deaths. This is contrary to most maternal mortality figures, as most studies show sepsis to lead in the causes of maternal deaths. It shows the importance of establishing more prenatal clinics in Virginia. There were ten deaths from postpartum hemorrhage, nine deaths from pneumonia and nine from pulmonary em-

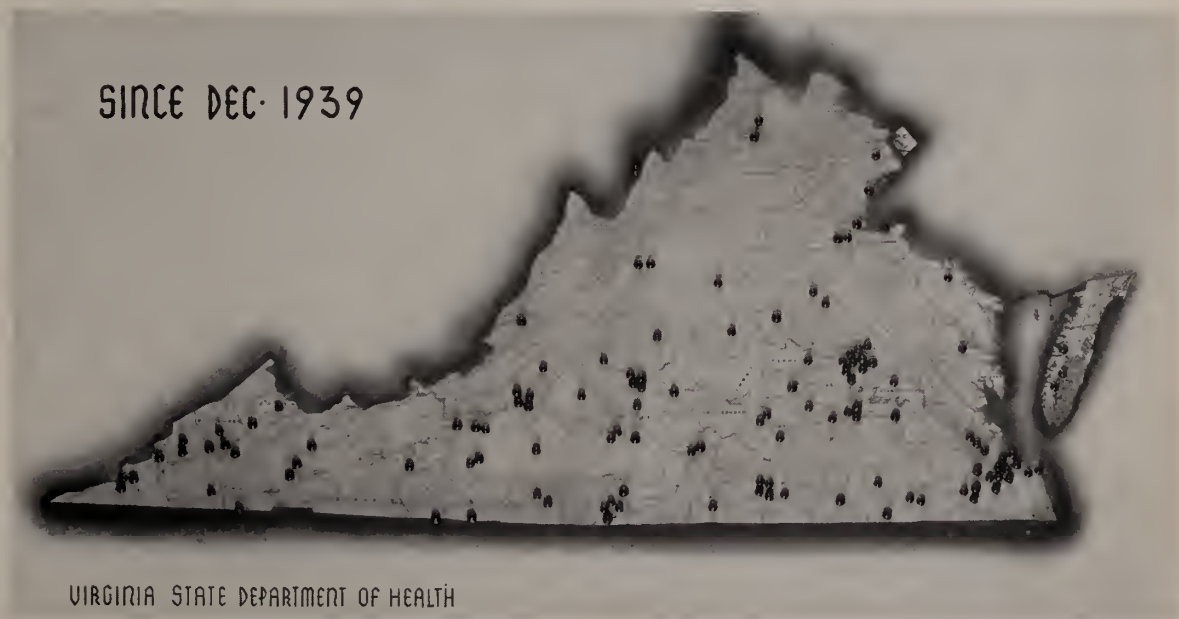


Fig. 4.—Place of residence of each maternal death.

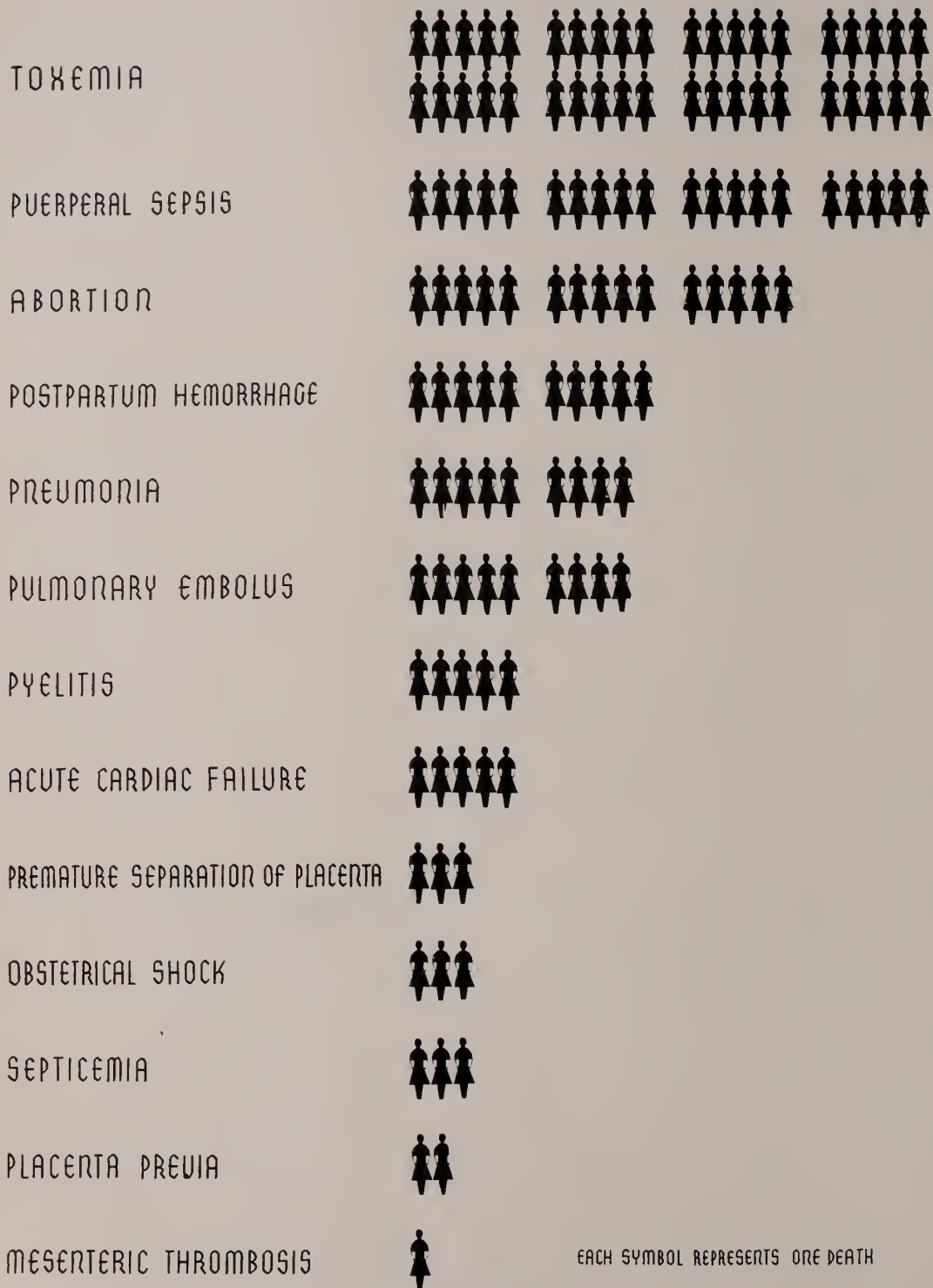


Fig. 5.—The causes of maternal deaths in first 125 cases.

bolus. Both of these groups are open to some question. My own belief is that when pneumonia begins during pregnancy it should be classed as a medical death.

As to the diagnosis of pulmonary embolus, I am rather skeptical unless it is supported by definite X-ray evidence or autopsy findings. The remaining

twenty deaths are divided between pyelitis, acute cardiac failure, premature separation of the placenta, obstetric shock, septicemia, placenta previa and mesenteric thrombosis, and, while one might question the diagnosis in some of them, even with corrections they would still be relatively unimportant. It would probably be better to put the two placenta previas in the hemorrhage group as most likely that group contains some other cases of placenta previa. The mesenteric thrombosis is extremely interesting and the doctor who had it ought to report the case in detail. But, even if he taught us how to recognize and to cure it, our results would not be greatly benefited.

The biggest problem that confronts us evidently is the treatment of the toxemias of pregnancy. It has long been recognized that deaths from toxemia are entirely preventable. The routine determination of the patient's blood pressure, the examination of the urine and recording her weight will give one warning of approaching danger in plenty of time to prevent a serious manifestation of the disease. That is so elementary that I need hardly mention it here. The problem is to get this knowledge over to the women who are going to have the babies. From our present review it is evident that the doctors are not doing all that they should to get it across. Take the sample case that I just showed you. The patient was first seen at seven months and was in good condition. Blood pressure was 120/80 and Wassermann was negative. She returned at intervals of two weeks. When her blood pressure rose to 140/90 and a trace of albumin appeared in the urine, bed rest, and a low salt and pork-free diet was advised and the patient was instructed to return at weekly intervals. The patient was not seen again for three weeks and was then definitely pre-eclamptic. This doctor lost a golden opportunity of saving this patient's life because he evidently did not impress upon her the gravity of her condition in the first place and had a poor follow-up system in the second place.

The curative treatment of toxemia as exhibited in these charts is open to serious criticism. Of course, it must be borne in mind that these represent the failures, and that while some of these were evidently mismanaged there were hundreds of others treated successfully. It seems to me that toxemia in Virginia has been treated either with utter indifference or else has been over treated. As an example of the former, one record quotes the doctor to the effect that the patient neither spoke nor showed any interest in her

surroundings after delivery and when he called to see her the next day he found her dead. As an example of the other extreme I cite the following: The patient was seen first by the physician about one and one-half hours after delivery. She was complaining of a severe headache and had generalized edema. Had convulsions prior to the arrival of physician and after that time had other attacks. Two doses of one-half grain of morphine were given. No convulsions occurred after the morphine. Several tablets of migraine No. 1 (contain caffeine) were given along with 20 grains of sulfanilamide. Forty grains of sulfanilamide were left with the family for later administration. At the request of the family, the patient was sent to the hospital. Admitted with a temperature of 99, pulse 120, dyspnea, edema, coughing up frothy, blood tinged mucus. Had rales over the entire right lung and base of left lung anteriorly, blowing systolic murmur, confused mentally. Treatment: Magnesium sulphate 10 cc. of 25 per cent solution intravenously. One dram of tincture of digitalis *stat.*, and 10 drops *q.* four hours, started on the second hospital day. Urotropin grs. x t.i.d. On the fourth hospital day digalen, amp. i, and repeat in four hours. Fluids taken by mouth. Pulse went to 150 on the fifth day. Because of restlessness on the eighth day she had 1/4 gr. morphine and later in the day 20 cc. of 25 per cent solution of magnesium sulphate. She was unable to swallow for one-half hour after the magnesium sulphate but seemed to recover later. Restlessness was marked later. A period of quiet was then followed by restlessness. Morphine grs. 1/4 at 9:30 P. M. Metrazol at 10:50 P. M. at which time death occurred. Death followed a period of Cheyne-Stokes respiration and cardio vascular collapse. From the available information it is difficult to surmise what was going on in the patient and what was the immediate cause of death and it is equally difficult to understand the rationale of the various treatments. I cannot understand why this patient should have been given sulfanilamide, the intravenous magnesium sulphate or the metrazol.

The musculature of the heart, already weakened by the toxemia, frequently does not stand the additional load of large quantities of intravenous fluids. This is well shown in the record selected at random, or in the following case, although in the latter there are the added errors of chloroform anesthesia and unnecessary operative interference.

"This sixteen-year-old, single colored primigra-

vida, started in labor spontaneously on the evening of May 9. She had had no prenatal care. After having been watched in labor by a midwife for twenty-four hours, a doctor was called because no progress had been made. She was first seen by the physician at 10:00 P. M. on May 10.

"At the time of the physician's first visit her B.P. was 140/90, pulse 90. Her general condition seemed good. There was no cervical dilatation or effacement on rectal examination. The head was engaged. Fetal heart sounds were in the R.L.Q., rate 140 per minute. Uterine contractions of good quality were occurring q. 3 minutes. Morphine grs 1/4 was given to promote rest. On the following morning the cervix was partially effaced and 3 cm. dilated. B.P. 150/100; F.H.S. same. The labor pains had been irregular during the night, and she had gotten some rest. The labor at this time was not particularly active. Nembutal grs. 3 was given. At 4:30 P. M. on the same day (eleventh) the patient's condition was worse. Her B.P. was 220/140 and pulse 130 per minute. The F.H.S. had increased in rate and were irregular. There was no change in the condition of the cervix. She was given morphine grs. 1/4 and referred to the hospital.

"On admission to the hospital at 6:30 P. M. on May 11, her B.P. was 180/120. The pelvis was checked and found to be ample, tuber ischii 7½ cm. The cervix was nearly completely dilated with the head in the mid-pelvis. Nembutal grs. 3 was given soon after admission.

"Cesarean section was considered, but delivery from below was thought to be preferable. She had now been in labor for forty-eight hours, twenty-four hours of which had been irregular and inactive. Soon after admission an attempt was made to deliver the patient with midforceps, but with reasonable amount of traction no progress was made.

"She was put back to bed and given 400 cc. of 10 per cent glucose in normal saline by venoclysis. Her B.P. remained around 145/90 following this attempt at delivery, which was lower than previously. Soon after receiving the fluids she developed pulmonary edema. Digifolin 1 cc. was given intravenously and 1 cc. intramuscularly. Atropine 1/150 was given by hypo.

"She was seen by another physician in consultation and, although her condition was poor, immediate delivery was decided upon. She was delivered at 1:00 A. M. on May 12 with axis-traction forceps

of a still-born, full term male from a position of persistent occiput posterior. An episiotomy was done, which extended to a third degree laceration. The delivery was done under chloroform anesthesia. Her condition remained very poor during delivery and she died at 1:20 A. M. while the perineorrhaphy was being done, seven hours after admission to the hospital and twenty minutes after delivery."

Another technical error that I have noted is the giving of pituitrin to toxic patients. The following is an example of this:

"*First Physician:* Saw patient because she was reported to have fallen while she was in the yard. At the time of the arrival of the physician, an occasional heart beat was noted. He gave ammonia by inhalation. As soon as she was able to swallow, the patient was given nitro-glycerine gr. 1/100 and digitalis. The amount of digitalis was not known. 'When the baby would move the heart of the mother would stop.' This was specified as the baby that caused the heart to stop and it had nothing to do with uterine contractions. At the time of arrival of the physician, there was nothing to indicate that she was in labor. This physician had delivered the patient of her first baby. Since that time, the husband had delivered eight babies but did not claim to be a midwife. He told the physician that his wife was at term. With the above information, the history from the husband that she had convulsions before the arrival of the physician and the fact that the patient's 'heart was bad,' pituitrin induction of labor was started. Three doses of pituitrin, twenty to thirty minutes apart, were given. After the third dose the patient stated that she had pain in her back. 'This was the best news up to this time for emptying of the uterus was the only hope.' With this much encouragement three other doses of pituitrin on the same schedule as before were given. The physician arrived at 4:30 P. M., and the delivery occurred at 6:50 P. M. There was no additional damage to the perineum. The placenta was delivered by the modified Crede. The baby was thought to weigh about ten pounds. The patient seemed to be in fair condition following delivery. The time spent with the patient was not stated, but the physician was called again to see her at 8:30 P. M., because of convulsions. He found her in an attack. She was given some 'kidney medicine', bromides and sweet spirits of nitre. The amount of this that was swallowed was not known. 'The patient's jaws remained rigid and the convulsive

attack continued.' The family called a consulting physician who sent the patient into the hospital without further medication.

"The patient was admitted to the hospital July 3, 1940, at 12:30 A. M., moribund, with a history from the husband of having had three convulsions before delivery and two after. The pituitrin given was as the original physician had stated. On admission the patient was given 800 cc. of 5 per cent glucose solution in distilled water I. V., and 20 cc. of 10 per cent magnesium sulphate solution I. V., and one capsule gr. $1\frac{1}{2}$ of seconal by rectum. The blood pressure on admission was 190/80, pupils were constricted, systolic murmur at the apex, heart enlarged, edema of the lower extremities, uterus well contracted. No urine could be obtained. No laboratory work was done. No convulsions occurred after admission. The patient remained comatose. She received no other medication. She continued to grow weaker and died at 5:30 A. M., five hours after admission to the hospital."

The giving of a general anesthetic to a toxic patient was responsible for a considerable number of deaths. The following is a good example of this: A fifteen-year-old primigravida was admitted to the hospital for Cesarean section on account of cephalopelvic disproportion. Her blood pressure was 196/114. A section was done under ether and eighteen hours later she had a general convulsion. She had seven more convulsions within three hours. Twenty cc. of a 25 per cent solution of magnesium sulphate were given intravenously, followed by 1,100 cc. of a 5 per cent glucose solution. An hour and three-quarters later she was given a second dose of magnesium sulphate, followed in an hour by 1,000 cc. of 10 per cent glucose solution. All told she had twenty convulsions, one gastric lavage, three doses of magnesium sulphate and 5,100 cc. of glucose solution intravenously, and died $63\frac{1}{2}$ hours after delivery. Had the section been done under local anesthesia, she probably would not have had convulsions, and the prognosis would certainly have been better.

Poor judgment was shown in attempting complicated surgical procedures upon toxic patients when simpler ones would suffice. For instance, "A twenty-seven-year-old colored multipara was admitted to the hospital on July 4, referred by a distant prenatal clinic because of an uterine pregnancy of seven months, complicated by hypertension. History obtained from clinic record revealed that on June 5

B.P. was 170/110 and there was four plus albumin in the urine. On the day of admission B.P. was 260/170 with four plus albumin in the urine. There was generalized edema. The patient complained of severe headache, blurring of vision and giddiness. The clinic record showed that in her fourth pregnancy there was hypertension and albuminuria. This pregnancy terminated in a normal spontaneous delivery of a full term living child. Examination on admission to hospital revealed marked edema of both lower extremities, abdominal wall and face. Uterus was enlarged to size of a seven months pregnancy with foetal heart sounds in LLQ. B.P. 270/170. Catheterized specimen showed 3-plus albumin and many granular casts. RBC 4,550,000, Hb. 88 per cent, WBC 12,800, Kline negative. Blood chemistry studies revealed blood sugar 78, NPN 32, uric acid 4.2, cholesterol 342, total protein 4.8, albumin 2.5, globulin 2.3. Kidney function tests: PSP total output for two hours was only 48 per cent, 8 per cent of which was in the first fifteen minutes. S.G. of Mosenthal tests varied between 1.012 and 1.017. Electrocardiogram tracings were within normal limits. There was moderate enlargement of the heart and thoracic aorta on a seven-foot film. Studies of the optic fundi revealed advanced arterio sclerotic changes in the fundal vessels with scattered exudates and hemorrhages throughout.

"Therapy in the hospital consisted of bed rest, salt-free diet, phenobarbital gr. $\frac{1}{2}$ t.i.d., and magnesium sulphate by mouth every other day. Under this therapy there was a marked diminution of the generalized edema and subjective improvement. However, there was no significant change in B.P. It was decided that pregnancy should be terminated.

"She was operated upon on July 11, seven days after admission, at which time a low classical Cesarean section was done, and the patient subsequently sterilized under spinal anesthesia, using 150 mgm. of novocain crystals dissolved in spinal fluid. She was delivered at that time of a premature living male weighing four pounds.

"The B.P. and pulse remained fairly constant on a level of 190/150, and 100 respectively during the entire operation. One hour after returning to the ward the B.P. suddenly dropped to where it could not be gotten, and patient went into shock. Ephedrine gr. $\frac{3}{4}$ and 500 cc. of glucose in distilled water was given, and the foot of the bed elevated. B.P. returned to 130/90 but, after a short while, again

dropped. B.P. continued to drop in spite of all therapy and she died six hours following operation. The collapse was thought to be due to a circulatory collapse. There was no evidence of external or internal hemorrhage." This beautifully worked up case was spoiled by too much surgery. How much better it would have been had the surgeon simply ruptured the membranes and allowed the patient to deliver herself.

Finally, the clinics sometimes fail to act on their own findings. Here is a forty-two-year-old colored married multipara who was first seen in a prenatal clinic in her third month of pregnancy. Examination revealed an uterine pregnancy of three months with a normal pelvis and complicated by a hypertension (160/90), a trace of albumin in the urine, and slight edema of the lower extremities. Pulse was rapid. All previous pregnancies had been normal. Twelve children were living and one dead. None were still-born. No record of previous hypertension. To make a long story short, the patient was put on digitalis and the pregnancy was allowed to continue uninterrupted, although there was no improvement in the hypertension or albuminuria. She was delivered by a midwife of a still-born fetus and died two hours later. My own feeling is that this pregnancy should have been terminated when the patient was first seen, but in any event provision should have been made for her delivery.

One of the things that impressed the Philadelphia group in their study of maternal deaths a few years ago, was the frequency with which the uterine cavity was invaded, especially in the treatment of abortions. They laid down the dictum that the pregnant or recently pregnant uterus could be invaded once possibly with impunity but a second invasion usually meant the death of the patient. That teaching should be taken to heart by the Virginia obstetricians. I could cite a number of examples of the violation of this rule. The following is a typical example: This twenty-three-year-old colored multipara consulted a private physician first about two weeks before delivery. She seemed to be in good condition at that time except for a positive Wassermann for which she was being treated. She was next seen by the physician a few hours after being delivered by a midwife. There had been an excessive amount of bleeding during labor and the bleeding continued. The placenta was delivered in pieces (manually?). The bleeding

stopped and packing was not necessary. In the next few days the patient passed pieces of the placenta of various sizes. About five days after delivery a D. & C. was done in the home because of bleeding. The patient was referred to the hospital three days later. RBC 2,480,000, Hemoglobin 45 per cent, WBC 29,450. The urine contained many hyaline and granular casts. In spite of blood transfusions and sulfanilamide, the patient died on the seventh hospital day.

Operative delivery has been responsible for a large proportion of the septic deaths. There was one that followed a version done for a prolapsed arm. The mal-position was discovered after the patient had been in labor thirty-six hours and the operation was done twelve hours later in the home and without an anesthetic. Three of the septic deaths followed Cesarean section, but this is not all the picture, for a number of the eclamptics who were delivered by section really died of infection.

While I am on the subject of puerperal sepsis, I want to sound a word of caution about the vaginal douche. At least one woman in this series owes her exitus to this form of treatment. This was a thirty-five-year-old colored XII-para whose membranes ruptured five days before onset of labor. Seen daily by midwife from then until onset of labor. After four hours of very hard labor midwife called the doctor, who arrived after the baby was born. Midwife above average intelligence, good past record, attends average of thirty deliveries each year; states she did not do any vaginal examination, gave no douche or enema. This confirmed by family. Placenta complete and examined by doctor. No vaginal examination by doctor or anyone at any time. Blood loss much less than average. Third day postpartum marked rise in temperature and chill, and midwife called doctor, who ordered lysol douche and S.S. enema—by telephone. Midwife states she gave douche only because the doctor insisted, that she is taught not to give douches. Used lysol 5i to one quart of warm water, with "greenish return." After this temperature went higher, lochia scant with very foul odor. Progressive weakness. No blood culture. No effort to hospitalize. Doctor saw case daily and gave large doses of sulfanilamide.

Postpartum hemorrhage is the third great captain of maternal deaths. As with toxemia and infection, an ounce of prevention is worth a pound of cure.

While we cannot prevent all cases of postpartum hemorrhage, as we can all cases of toxemia and all serious cases of infection, we certainly can prevent those that arise from operating through an undilated cervix or, what is the same thing, a pituitrin-precipitated birth under the same circumstances. No. 36 C is a case in point. The doctor was first called to see this thirty-three-year-old white XIII-gravida at 7:00 A. M. on the day of death. She was at term, in questionable early labor, and had had no prenatal care. The doctor instructed the family to call him back when active labor started. He was next called to see this patient about 3:30 P. M. and found her in active labor. According to the family, she had had about two hours of good active labor with no bleeding or other complications. At 3:45 P. M., shortly after arrival, the doctor gave her pituitrin $\frac{1}{2}$ cc. About ten minutes later, a full term living child was delivered spontaneously. About fifteen minutes after delivery the patient started bleeding rather profusely. She was treated for shock. The bleeding continued and she died about three hours following delivery from acute blood loss.

Many cases of postpartum bleeding, of course, cannot be prevented, but the doctor should be prepared to cope with such an emergency should it arise. There is no need of my describing the various means of stopping uterine hemorrhage, such as holding the uterus between the two hands with pressure cephalad to put the uterine arteries on the stretch, compression of the abdominal aorta, the giving of pituitrin and/or the water soluble extract of ergot, or the ways of combating shock, such as elevation of the foot of the bed, bandaging the limbs and keeping the patient warm. I do want to emphasize the importance of having handy four-inch rolls of sterile gauze for packing and facilities for the intravenous administration of glucose solution or blood. Earlier in my paper I criticized the over-zealous use of fluids intravenously in toxemia. No one could possibly find fault with its use here unless it were used and no effort be made to stop the hemorrhage. Certain types of cases, notably polyhydramnion, multiple pregnancy,

fibroids, and placenta previa are especially likely to be complicated by hemorrhage. In such cases donors should be located and the bloods matched so that there will be no delay should occasion to give a transfusion arise. I stress the gauze packing because so often I have seen patients brought into the hospital with the vagina filled with wads of cotton. In this connection, I wish to bring up for discussion the question of packing preparatory to bringing a patient with placenta previa into the hospital. At a number of medical meetings, when this was under discussion, I have asked if any one had seen a patient bleed to death from an initial hemorrhage in placenta previa. So far, I have never gotten an affirmative answer. My own feeling is that the risk of infection from the packing far exceeds the risk of serious antepartum hemorrhage, and that the best thing to do is to give the patient a dose of morphine, and to move her to the hospital without packing. A vaginal or even a rectal examination is contraindicated until you have everything in readiness to control the hemorrhage that might result.

In conclusion, it is evident that the great majority of the maternal deaths that are occurring in Virginia are preventable. They can be prevented, and I am confident they will be prevented when the people become informed of the real dangers. On the other hand, the doctors are not entirely without blame. They are committing errors, both of commission and omission, in the treatment of the emergencies that should not, but do, arise. If the patient does not know enough to keep from having eclampsia, her doctor should do his best to cure her of it. With good judgment, and good technic, there should be no fatal cases of sepsis following term pregnancies. The post-abortion deaths present a problem too big for the medical profession to solve alone. All too frequently the doctor is called in to lock the stable door after the horse has been stolen. The hemorrhage cases are a real challenge to us doctors. With better preparation, more skill, and a better understanding, we can cope successfully with the majority of them.

616 Medical Arts Building.

SPONTANEOUS PNEUMOTHORAX OF THE NEWLY BORN— With Report of a Case.

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Spontaneous pneumothorax is being reported more and more frequently in both adult medical and pediatric literature. In the several series of apparently healthy adults with this condition reported by Wilson,¹ Perry,² and Blackford³ there were instances of recurrences and bilateral pneumothoraces. Tuberculosis was ruled out in the majority of these cases by negative roentgen and tuberculin studies. Exertion seemed to have little or nothing to do with the onset.

These observations suggest some underlying pathology or congenital defect of lung tissue. Kjaergaard⁴ said that healthy lungs *in situ* will stand a pressure of 200 m.m. Hg. He demonstrated in pathological specimens valve vesicles or blebs into which air could enter but from which it could not escape. The pressure in some of these became so great that the bleb ruptured. This valvular apparatus was due to distortion of lung tissue by scar or emphysematous tissue, or by the formation of congenital cysts.⁵

The latter term (congenital cyst) is not a good term, for, as Anspach and Wolman⁶ point out, congenital air cysts of the lung are fluid containing at birth, and their post-natal behavior depends principally on mechanical factors. If there is no communication with a bronchus the cyst contains fluid; if there is free communication with a bronchus the cyst becomes a non-expansile air cyst after birth; if there is a one-way valve mechanism at the orifice of the communicating bronchus the cyst becomes the expansile "balloon" type of cyst. Therefore, the only cysts that are dangerous to the patient are those containing air, and, since "congenital" cysts do not contain air, it would seem well to drop the qualifying adjective "congenital" and refer to them as fluid cysts or air cysts.

Although it is generally supposed that the immediate cause of spontaneous pneumothorax is rupture of a subpleural bleb, Hamman^{7, 8} has recently reported a different cause. He describes mediastinal emphysema associated with pneumothorax. This

train of events is begun by interstitial emphysema of the lungs. Air escapes into the surrounding connective tissue, mostly around the arteries, and travels along the fascial planes toward the mediastinum. Having reached the hilus it spreads out into the the mediastinum. It may then cause rupture of the delicate mediastinal wall and enter the pleural cavity, causing pneumothorax. By direct experiment it is easy to force air from the mediastinum into the pleural cavity but it is never possible to force air from the pleural cavity into the mediastinum.

Hamman also says that it is possible for the escaped air to travel toward the pleural surface and there produce a pleural vesicle which may later rupture. However, the former mechanism is more likely, as judged by the experimental work of Macklin,⁹ who used pressures of from 10 to 220 m.m. Hg. in his experimental work on animals to cause pulmonary emphysema.

Since Ruge's¹⁰ first description of spontaneous pneumothorax in newly-borns it has been recognized with increasing frequency, especially since the roentgen ray has come into common usage. The diagnosis is most difficult without an X-ray. Stein¹¹ reported such a case which was subsequently found to be a large air-containing cyst.¹²

Many cases have been published under the title, spontaneous pneumothorax of newly-borns, which were probably due to disease of lung tissue beginning some time after birth, such as pneumonia, abscess, tuberculosis, pertussis, measles, diphtheria, empyema, gangrene, bronchiectasis, foreign body or infarct. Silver¹³ says: "It would seem that the term could be better applied if it were not extended so as to include the entire neonatal period, ordinarily reckoned at about one month, but were limited to the period between birth and the establishment of the normal vital processes. This period then would be limited to the first four or five days of life, and lesions that made their first appearance after this time might better be considered as disturbances having a separate cause."

Accepting this time limitation, then, the number of reported cases is twenty-one. They are as follows: Ruge¹⁰ one, Flipse¹⁴ one, Emmert¹⁵ one, van Ebbenhorst Tengbergen¹⁶ three, Tollkühn¹⁷ one, Deissler¹⁸ one, Hotz¹⁹ three, Willi²⁰ one, Bertin²¹ three, Donahoe²² two, Storts and James²³ one, Silver¹³ one, Rothman²⁴ one, Strongin¹² one.

CHARACTERISTIC ONSET

The child after birth breathes normally or has slight difficulty in respiration. The amount of dyspnea and cyanosis is no more than that commonly observed in newly-borns. There may be slight respiratory embarrassment, and atelectasis is usually the diagnosis. At some time during the first week the child suddenly develops respiratory and circulatory difficulty.

The best procedure is careful observation (with or without oxygen and carbon dioxide inhalations) for the neutral or positive pressure in the pleural cavity facilitates closure of the ruptured pleura. This failing, aspiration of air with a syringe, or some apparatus for the continuous release of the air which is under positive pressure, may be attempted.

CASE REPORT

The patient was the first child of a twenty-five-year-old white mother who had always been healthy. Her Wassermann reaction was negative. The pregnancy was full term and uncomplicated. Labor lasted thirty hours but was otherwise uneventful. Obstetrical analgesia consisted of three grains of nembutal and one two-hundredth ($1/200$) grain of hyoscine hypodermically. The latter drug was repeated at the end of an hour, but was given four and a half hours before birth took place. Birth occurred spontaneously from the R. O. A. position at 7 A. M. July 18, 1939.

The baby was somewhat cyanotic at first but soon breathed well and appeared to be a normal male baby. His birth weight was seven pounds three ounces, and length, twenty inches.

That evening at 6 P. M. he was put to the breast routinely and nursed vigorously. Afterwards it was noticed that his color was slightly cyanotic, but became natural as soon as he was picked up. The next morning he was moderately cyanotic and his respiration was shallow and rapid. Oxygen and carbon dioxide inhalations were begun, and were continued off and on throughout the morning.

On physical examination distant puerile breath sounds were heard over the left lung as well as impaired percussion note and crepitant rales throughout the left chest. As the heart and right lung appeared normal it was felt that he had atelectasis of the left lung. A roentgenogram was made at 2:30 P. M. and showed in reality a large pneumothorax of the right chest, chiefly anteriorly with the heart and mediastinum displaced toward the left. Both lungs were opaque, due to compression. The lungs must have aereated at some time as the ribs extended horizontally rather than in a slanting position, seen in congenital atelectasis.

See Figures 1 and 2.



Fig. 1.

By this time it was apparent on inspection that he was breathing mostly with the left lung, and rapidly. The percussion note was tympanitic over the right chest anteriorly. Posteriorly it was equal on the two sides. Cardiac dullness and apex beat had shifted to the left. Very little air was heard to enter either lung. Crepitant rales were present

on the right posteriorly and on the left in front and back.

Forty cubic centimeters of air were aspirated from the anterior part of the right thorax. Cardiac dullness shifted back and he breathed more naturally. His color became pink even without the administration of oxygen.



Fig. 2.

Again he was put to the breast and, during the course of nursing, became cyanotic. It was evident that some apparatus must be arranged to counteract the rapidly accumulating tension pneumothorax.

A twenty-gauge intravenous needle was filed off to three-quarters of an inch in length and inserted between the third and fourth ribs in the anterior axillary line on the right, and anchored to the chest wall with adhesive tape. A flexible rubber tube was attached to the needle and the loose end immersed in a jar of water on the floor. Much air bubbled through the water, and again the baby improved as before and was able to breathe comfortably without the administration of oxygen.

All of this delay took valuable time and proved

weakening to the baby. He was given normal saline and 5 per cent glucose solution by hypodermoclysis but had consumed little real sustenance. He died at 10:30 P. M. apparently of exhaustion.

The interesting postmortem findings were limited to the thorax; hence, the rest will be omitted. Both pleural cavities contained negative pressures. The heart and mediastinal structures were in normal position. Both lungs appeared to be normal in size and position. There was no evidence of emphysema of the subcutaneous or mediastinal tissues. Several emphysematous blebs were scattered over the surface of both lungs, but no rupture of any of these could be demonstrated. No blood or excess fluid was found in either pleural space.

On palpation the lungs were found to be normal for a newly-born. The heart and pericardium were normal. The heart weighed twenty grams and the lungs weighed thirty grams each. The lungs were equally distended and their consistency was compatible with those of newly-borns. Aside from the above mentioned emphysematous blebs, no abnormalities were demonstrated. They both floated well above the surface of water. On section the bronchial tree was found to be clear of obstruction. The cut surfaces were of the usual pink color.

Microscopic sections showed partial atelectasis and areas where the alveolar walls had broken, forming emphysema. Several of these were just beneath the pleura, but in no place was a rupture through the pleura seen.

Fat stains demonstrated large masses of caseous material filling many of the bronchi. This appeared to be vernix caseosa. Also large epithelial cells were seen in the alveoli much resembling those seen in amniotic fluid. Bacterial stains showed no definite flora. The pathological interpretation was: Areas of aspiration pneumonia.

CONCLUSIONS

Cases of spontaneous pneumothorax of the newly-born are fortunately rare, but because early recognition and treatment is of such importance they must be kept in mind at all times. The mortality is much higher in the younger than in the older group where vital processes of life are better established.

In any case of cyanosis in a newly-born one should think of the following: atelectasis, congenital malformation of lungs or heart, herniation

of the diaphragm, and pneumothorax. A roentgenogram should be made, as this helps to differentiate these conditions quickly. If pneumothorax is present, early appropriate treatment might go far toward saving the life of the patient.

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Medical Arts Building.

LABORATORY PROCEDURES IN THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE.*

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No single year passes without the usual number of papers on the differential diagnosis of jaundice, and I can refer you to no more barren field of medical literature. Each review cites the literature, bemoans the lack of a procedure capable of measuring all of the functions of the liver, and concludes with

the advice that "after all, a careful history and physical examination are most essential."

Fortunately there are exceptions to this. These are the contributions of Quick on the hippuric acid test, the clinical experience of Snell, Boyce, White and others with this test, and the work of Watson and Sparkman on urobilinogen excretion.

Although history and physical examination play an important part, as in any disease, the actual di-

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agnosis in jaundice is largely dependent upon the laboratory. Lack of appreciation of the help to be found in the laboratory in differentiating the several types of jaundice probably has resulted from the confusion caused by the multiplicity of tests of liver function advocated and the frequently conflicting results encountered.

An intimate knowledge of the pathology involved in the various states of jaundice is necessary, if the physician is to properly interpret the results of laboratory procedures.

Non-obstructive jaundice may be represented as including the hemolytic anemias, acute and subacute yellow atrophy, catarrhal jaundice, Weil's disease, and the toxic hepatoses associated with drugs, poisons, and toxic conditions. With the exception of the blood dyscrasias these cases all have an essentially similar underlying pathology: destruction of liver cell activity as a result of necrosis of liver cells or impairment of the function of these cells, especially those about the central veins. On the other hand, it is the biliary system that is involved in obstructive jaundice rather than liver cells themselves. The exceptions are those cases of long standing infection where there frequently is the added factor of secondary hepatic injury with some disturbance of liver function. It is this last group which is the source of confusing results in liver function tests.

Because of these discrepancies we have been too prone to dismiss the tests for liver function as being of little value. Or, we have studied our jaundiced patient with a variety of procedures without a proper critical evaluation of the divergent results.

Ask the average internist or surgeon what he thinks of tests for liver function—and it is upon the state of liver function that we must depend in the differential diagnosis of jaundice—and, usually, he will reply without hesitancy that he has no confidence in them. In contrast, this same internist or surgeon will profess a complete faith in the commonly accepted tests for renal function. Is it not possible that our greater confidence in the kidney function tests is due to the fact that we can check our findings by doing a careful urinalysis, while in the case of the liver we are dependent on the function test alone? Then, too, we have learned to interpret the high non-protein values due to causes other than renal disease, while lack of clinical experience still confronts us in interpreting liver function tests.

Many tests have been advocated as useful in the differential diagnosis of jaundice. More recently, however, attention is being focused on those procedures which appear to measure the ability of the liver to handle substances the conjugation of which is the duty of the liver alone. The older dye injection tests are based on this principle, but, while they, and especially the bromsulphthalein test, are valuable as a gauge to liver function, they offer little help in the presence of jaundice.

Today the Quick hippuric acid test is practically universally accepted as the most accurate gauge of liver function. Although, as with other procedures, results may prove confusing where there is both obstruction and secondary liver disease, it is to be recommended as the most satisfactory test available. An excess of benzoic acid is given by mouth or intravenously and the ability of the liver is measurable in the amount of hippuric acid recovered in the voided specimen. Benzoic acid is conjugated to hippuric acid by glycine in the liver. In parenchymatous liver disease with jaundice hippuric acid excretion is greatly diminished. It is normal in simple obstruction. In those cases of obstruction with decreased excretion, the surgeon should appreciate this warning of associated liver disease and inaugurate intensive pre-operative treatment.

Following the work of Watson and Sparkman there has been a revival of interest in the test for urobilinogen in the urine and feces. Formerly used almost exclusively as a measure of intravascular red blood cell destruction, the test is thought to have considerable value as a measure of liver function. Absence of urobilinogen from the urine is the best known indication of complete biliary obstruction, and Watson considers very low values in the urine and feces practically conclusive of an obstructing malignancy. Excretion of the pigment is increased in all forms of liver disease, even in focal lesions, and is high as well in incomplete obstruction and increased blood destruction. As with all other laboratory procedures the physician, if he is to gain information from the test, must be acquainted with those factors which might alter the result. Among such factors are renal impairment, chronic passive congestion, pulmonary tuberculosis, and colon bacillus infection.

These two procedures are to be recommended as the most sensitive laboratory aids in the differential diagnosis of jaundice. They are also valuable in study-

ing the patient with suspected decreased hepatic function. To the criticism that they do not measure all of the functions of the liver, one can agree with Quick in his answer that "the clinical results with the hippuric acid test are such as to make these theoretical considerations matters to be left to erudite physiological discussion." As he points out, Snell and other clinicians are finding that the jaundiced patient with a 50 per cent reduction in hippuric acid is a poor surgical risk. The test is valuable not only in differentiating the types of jaundice, but also is helpful in indicating prognosis and in evaluating treatment.

Little is to be found in the literature concerning the value of the non-protein nitrogen determination in the differential diagnosis of jaundice. An elevated value is seen in the toxic hepatoses with enormously high levels especially in Weil's disease, while in obstructive jaundice the non-protein nitrogen is not elevated. This nitrogen retention is due in part no doubt to an associated interstitial nephritis which is demonstrable at autopsy in many of these cases. Agglutination tests for Weil's disease should be available for general use in the near future.

All patients with jaundice deserve a prothrombin determination if facilities are available. The procedure is not one, however, that can be done by any technician in any small laboratory. In addition to the information the test offers as to a possible hemorrhagic tendency, the prothrombin time may prove an indirect aid in differential diagnosis. A marked decrease in prothrombin would favor an obstructive jaundice.

There are many other liver function tests and more are being proposed. Most of these are too expensive or troublesome to be of practical value and none of them have demonstrated advantages over those recommended above. Of these the gallactose tolerance test is most deserving of mention. However, this procedure is more expensive and the possibility of outside factors, such as adrenal action, make it less reliable. It is of little value in chronic cases.

Total cholesterol determinations appear totally unreliable in differentiating the jaundiced states. Recent studies of the cholesterol esters are of research interest and are increasing our knowledge of body chemistry, but it seems doubtful that they will contribute materially to the differential diagnosis of jaundice. In conjunction with other tests low values are of some diagnostic interest in acute liver disease.

The Takata Ara reaction now is known to be an index of globulin increase rather than a measure of liver disease. And even in this latter role it has been replaced by the formol-gel test.

Phosphotase determinations have been advocated as valuable in the differential diagnosis of jaundice. The same increases noted in cases of obstructive jaundice are to be seen in bone destruction. Expressed in Bodansky units the normal values are quite variable. The relation of phosphotase to the liver is not known, and the test appears to have little to offer in the study of liver disease. High values may be found in obstructive jaundice.

The Van-den-Bergh reaction still holds a place in textbooks as a differentiative test in jaundice. It is supposed to give an indirect reaction in hemolytic processes and liver disease where the liver has not acted upon the bile pigment and a direct reaction with the increased pigment of obstruction. This qualitative action is disputed both from clinical observation and experimental work and it seems more probable that the several phases of the reaction are due to the concentration of bile in the serum rather than to any qualitative changes. As a quantitative gauge of jaundice the icterus index is more accurate and less complicated in performance. No diagnostic value is claimed for the icterus index, its principal use being in measuring latent jaundice and following the jaundiced patient. An increased icterus also accompanies carotinemia, but this amounts to only several units and is relatively unimportant.

One working in hematology cannot fail to become conscious of the association of a relatively constant blood picture with liver disease. Along with others I have noted the macrocytic red blood cell picture of cirrhosis. Further, and quite by accident, it was discovered that a reticulocyte rise is invariably associated with recovery from the jaundice of parenchymatous liver disease. Study of approximately one hundred cases of various types of jaundice has convinced me that a careful evaluation of the blood picture offers an amazingly accurate means of differentiating obstructive from non-obstructive jaundice and, in fact, of distinguishing the various types of toxic hepatoses.

The laboratory does appear to have available definite help for the physician who is puzzled by the jaundiced patient. In the hippuric acid test we have, I believe, a measuring rod for liver function as accurate as are the commonly used non-protein nitrogen

and phenolsulphonphthalein tests in their measure of renal function. The trouble is not with the laboratory. It is with the clinician who has decided that liver function tests are of little value and denies himself and the laboratory the clinical experience with liver function tests which is necessary to substantiate their value. As a matter of practical importance it would seem that a liver function test would be of more value in a systematic study of a patient than would renal function tests. Not only have we had

years of clinical experience with renal function tests, but also we know that a well done urinalysis is easily available as an indicator of the need for any further study of renal function. There is no such indicator in the case of the liver. Conceivably we have encouragement in the way of therapy to offer the patient with incipient liver disease, while I doubt our ability to alter the course of advancing nephritis.

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POSTPARTUM HEMORRHAGE.*

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Leading the list of causes of maternal death is sepsis, with hemorrhage running a close second. It seems impossible to definitely evaluate the real importance of hemorrhage as it so frequently constitutes a contributory factor in a septic death. The incidence of infection during the puerperium increases with an increase in blood loss. Hemorrhage is recognized as the cause of 13 to 15 per cent of maternal mortality.

Immediate postpartum hemorrhage is defined by DeLee as "all hemorrhage attending delivery of the placenta and during the first twenty-four hours". There is no agreement as to the amount of blood that constitutes the normal or physiologic postpartum blood loss. Ahfield reports 500 cc., Brandt 195 cc., Calkins 179 cc., and 222 cc., Pastore 244 cc., Plass 317 cc., Tarnier 600 cc., Tucker 300 cc., and Williams 343 cc.

The incidence of blood loss of 600 cc. or more varies from 2.5 per cent in a series of 800 cases reported by Calkins to 13 per cent in 1,000 cases reported by Williams.

A postpartum blood loss of 500 cc. may be well tolerated by one individual but not by another. There are factors other than the actual blood loss that must be considered, such as the individual's size and weight, the blood picture prior to delivery, her resistance and constitutional characteristics, the presence of toxemia, etc.

Pastore has very sensibly suggested that the blood loss be expressed in relation to body weight, the

blood loss in cc. divided by the patient's weight in kilograms times ten, equaling the per cent blood loss. On this basis a 600 cc. blood loss in a patient weighing 60.0 kilograms would be equivalent to a 1 per cent hemorrhage, and the same would be true if a patient weighing 80 kilograms lost 800 cc. of blood.

By virtue of the fact that the expression of blood loss in terms of body weight takes into account an important factor in the toleration of blood loss it would seem worthy of adoption.

We are primarily interested in attaining the least possible blood loss and only academically so in determining the point of transition between the physiologic and the abnormal. However, the series reported by Calkins, having an average blood loss of 179 cc., certainly gives us a point to which we can direct our efforts.

We often think of postpartum hemorrhage as a distinct entity. With few exceptions the same causes producing the hemorrhage are present at every delivery. The factors influencing puerperal bleeding are many. Large doses of analgesia and anesthesia, a large baby, operative deliveries, abnormal situations of the placenta, mechanical interference with the contraction of the uterus produced by premature separation of the placenta, retained secundines or myoma uteri are among the recognized causes of bleeding.

Calkins, in a study of 700 cases, came to the conclusion that parity and the length of labor have little or no effect on blood loss. If an episiotomy is done, or if poor labor pains have been present, the average blood loss is increased 60 cc. For a large baby and a

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large placenta add 100 cc. to the average blood loss. He regards as the two most important factors in postpartum blood loss improper management of the third stage of labor and large doses of analgesia and anesthesia.

Today women expect to pass through labor with a minimum of pain. The physician who attempts to secure a complete and perfect analgesia in every case frequently finds that his reward is an atonic uterus. Difficult or instrumental deliveries prolong the duration of the anesthetic with its resultant uterine atony. I share the good fortune with some of you of having been able to observe a certain amount of normal obstetrics where little or no analgesia and only a small amount of ether was used. Uterine tone under these conditions is much better than when analgesia is profound and the anesthetic is prolonged.

It is necessary that we be guided by our own judgment in regard to the amount of analgesic drugs administered and to hasten as much as we safely can that part of the delivery during which the anesthetic is administered.

The work of Calkins has probably done more than that of any other to call attention to the management of the third stage of labor and to show that placental separation takes place earlier than was formerly supposed.

His routine of management is as follows: The care of the infant is entrusted to an assistant, or postponed. The physician directs his attention to the mother. The hand is placed on the uterus immediately after the birth of the baby and kept there constantly. The uterus immediately contracts and assumes a flattened discoid shape, which is maintained for a relatively short time. The shape of the organ then becomes globular. This indicates placental separation. The placenta should now be gently expressed without waiting for the rise of the uterus in the abdomen. This does not occur until several minutes later and is indicative of descent of the placenta rather than separation. At about the time the uterus changes in shape there is also a slight trickle of blood from the vagina. This sign is not regarded as positively indicative of placental separation but as confirmatory to the sign of change in shape.

Expression of the placenta should not be hastened unnecessarily but delayed expression of a separated placenta favors the formation of a larger retroplacental blood clot. Expression of the placenta is per-

formed synchronously with a uterine contraction and is not attempted with the uterus in a flaccid state. The body of the uterus is then lifted out of the pelvis and constantly palpated by an assistant until the perineal repair is performed and the delivery completed. Usually pituitrin and ergot are administered at the completion of the second and third stages respectively. Using the change of shape as an indication of placental separation the duration of the third stage has been shown to be from three to five minutes.

From the time of delivery of the infant until placental separation occurs there are three main causes of bleeding. Perineal or vaginal lacerations constitute a source of bleeding which, although slight, will, if neglected, amount to several hundred cc. of blood. Frequently this bleeding can be controlled by pressure, but excessive bleeding from these sources should be controlled by immediately placing in the deep repair sutures.

Prior to placental separation bleeding, not accounted for by vaginal or perineal laceration, is probably of cervical origin. Cervical laceration sufficient to produce hemorrhage is a rare occurrence. When it does occur the bleeding is arterial in type and is independent of uterine contraction.

Partial separation of the placenta, perhaps resulting from a partial placenta accreta, may result in blood loss at this stage. If the flow is not too great, complete separation may be awaited, but the extent of the hemorrhage may make a manual removal of the placenta necessary.

The period from the time of separation of the placenta until this organ is expressed is an important one. Recognition of placental separation and immediate expression will prevent the formation of an unnecessarily large retroplacental blood clot. The practice of performing the perineal repair prior to expression of the placenta is one that is done entirely at the expense of the patient.

Following expression of the placenta, there are four chief factors that influence blood loss. Of these, uterine atony is most frequently encountered. If mild massage is not effective, 3 minims of pitocin which is protein free diluted in 2.5 cc. of normal saline, if given by vein, will be effective in from forty to fifty seconds. This solution may be kept over a period of time and has been found a stable one.

Prolapse of the fundus into the pelvis may cause a bleeding that is alarming because of its profuse and continuous flow. This may be corrected by lifting

the fundus out of the pelvis. A vaginal tamponade, condemned by some, if placed in when it is determined that the uterus is firmly contracted and remains so, will serve to keep the fundus out of the pelvis and also to absorb the trickle of blood that invariably occurs and which prolongs the period required for the perineal repair.

Perineal, vaginal, and cervical lacerations must again be mentioned as contributing to the blood loss at this stage.

There are also special abnormalities that are encountered. Placenta previa, mechanical obstruction to uterine contraction resulting from premature separation of the placenta, myoma uteri and retained secundines, inversion of the uterus, placenta accreta and rupture of the uterus may be mentioned.

Pastore has made some very interesting correlations between blood loss and morbidity. As previously described, he expresses the per cent of blood loss as the blood loss in cc. divided by the patient's weight in kilograms times ten. He found that with blood losses below .3 per cent, morbidity was 4.5 per cent; with blood losses from .3 per cent to .7 per cent, the morbidity was found to be more than doubled; and with losses of 1.5 per cent the morbidity rose to 31.8 per cent.

On the third postpartum day when the cell volume was 40 per cent, morbidity was 4.5 per cent; when the cell volume was between 30-40 per cent,

the morbidity was 7.5 per cent; and when the cell volume dropped below 30 per cent morbidity rose to 30 per cent. When hemorrhage in terms of body weight and cell volume prior to delivery are known, it is possible to predicate the cell volume on the third postpartum day. When this is predicated to be below 30 per cent, replacement of blood should be done in twelve hours.

In considering the treatment of postpartum hemorrhage I feel we should think first along the lines of prevention.

With exception of the few clinics at which special work is being done in regard to postpartum hemorrhage, there is usually no accurate means of determining the actual blood loss. An accurate and visible measurement of blood loss is important.

Local anesthesia, although not now widely used, possesses certain features that appear desirable from an obstetric point of view.

The importance of the management of the third stage of labor has been discussed.

Vitamin K administered to patients whom we anticipate will experience an abnormal blood loss may prove of value.

The treatment of choice in cases of severe blood loss is, of course, blood transfusion. Glucose and gum or glucose alone will provide supportive treatment until the blood can be replaced.

700 Prince Street.

CORONARY THROMBOSIS IN A TWENTY-ONE YEAR OLD MALE FOLLOWING HYPERTHERMY.*

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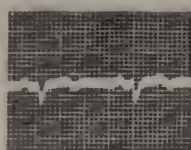
Within recent years increasing evidence has been accumulated to indicate that coronary disease is far more frequent in the young than was previously believed. Numerous cases of coronary thrombosis in young adults have been reported in the literature.^{1, 2, 3, 5, 7}

The present case is reported with a view not only of adding another case to the literature but to call attention to a possible complication of fever therapy.

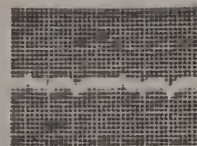
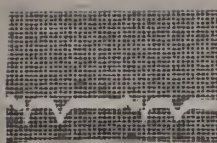
D. H., a white male, age twenty-one, entered the genito-urinary service of U. S. Marine Hospital,

Norfolk, Va., September 13, 1939, complaining of pain in the left hip and recurrent urethral discharge. He had contracted gonorrheal urethritis one and a half years before admission and had had frequent recurrence of his urethral discharge. His joint pain had begun three months prior to admission. Physical examination was essentially negative with the exception of a mucoid urethral discharge. No objective signs of joint disease were present, although the patient complained of rather severe pain in the left hip. Numerous pus cells and many gram negative cocci, but no typical gonococci, were found in the urethral smear. No evidence of cardiac disease was

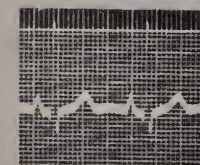
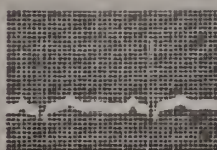
*From the Medical Service of the U. S. Marine Hospital, Norfolk, Va.



Lead I



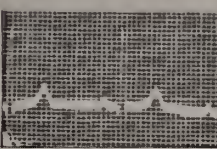
Lead II



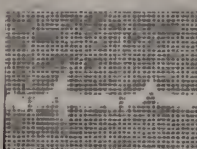
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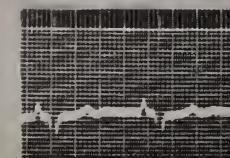
Oct. 18, 1939



Oct. 31, 1939



Nov. 13, 1939



Lead III



ELECTROCARDIOGRAPHIC TRACINGS MADE ON THE ABOVE DATES Feb 6 1940
Lead IV F

present. Blood pressure 120/68; pulse 80; temperature 36.9. Kahn and Eagle tests were negative on repeated examinations. X-ray of chest showed the heart and great vessels normal. Urinalysis showed specific gravity of 1.035 but otherwise negative. He denied any severe illnesses except pneumonia which he had as a child and claimed he had always been in excellent health prior to present illness. He smoked 12-15 cigarettes a day.

He had been treated several times previously with sulfanilamide and urethral irrigations. Because of the failure of cure and his present joint symptoms, it was decided to employ fever therapy.

On September 20, 1939, he was given six hours at 106° in the Kettering hypertherm with no apparent ill effect. On September 26th, he was given another six hours at 106.5° which he appeared to tol-

erate well. He was taken out of the hypertherm at 1:50 P. M. and returned to the ward and given the routine treatment.† At 3:00 A. M., September 27, he complained of substernal pain of a sharp stabbing character. He was seen by the interne shortly afterward and given morphine gr. 1/4. The interne was not impressed by the severity of the patient's pain and because he did not appear ill and was considered somewhat neurotic, a complete physical examination was not done. Very little relief was obtained with the medication given and about 6:00 A. M. he began to vomit, still complaining of the substernal pain.

One thousand cc. of 5 per cent glucose was then given intravenously. Later morphine gr. 1/4 was again given and this time complete relief of all pain was obtained. The vomiting promptly ceased and on September 28th, the patient was again in apparent perfect health with exception of the slight mucoid urethral discharge. No further chest symptoms were noted.

On October 4, 1939, it was decided to give the

†Routine treatment of hyperthermy cases is as follows:
Night before hyperthermy—an enema, one pint of milk and sodium amytal, gr. III.

In hyperthermy—fluids *ad lib.* 1,000 cc. 5 per cent glucose in saline q. 4 h.

After hyperthermy—supper on return to ward. Fluids *ab lib.*, intravenous if indicated.

patient another period of hyperthermy, but in view of the attack of substernal pain a medical check-up was requested. Physical examination at this time was essentially as before. The electrocardiogram, however, showed definite abnormality. There was evidence of right heart hyperactivity and inversion of all T waves. On October 18th, the electrocardiogram showed a sharply negative V shaped T₁ and sharply positive T₃ characteristic of an anterior infarction. A diagnosis of coronary thrombosis of the anterior descending branch was made. Films on October 31st and November 13th showed further changes. The patient was discharged on December 7, 1939, with no further symptomatology.

He returned February 5, 1940, at which time examination was essentially as before except that a soft systolic murmur was present over the tricuspid area. A sedimentation rate at this time showed a drop of only 2 mm. at the end of one hour. White blood count was 8,600; 59 per cent neutrophils. X-ray of chest was normal. The electrocardiogram showed definite changes toward normal.

It cannot be definitely stated that the hyperthermy was the cause of this thrombosis but certainly there is a remarkable coincidence.

It is difficult to hypothesize what might have happened to this patient had he been put in the hyperthermy as scheduled on October 4th.

This case has impressed upon us another possible complication of fever therapy and has served to bring to our attention the fact that many young people may have coronary disease which we cannot detect by physical examination. A routine electrocardiographic study is made on every patient before hyperthermy in the hope that we may possibly detect latent

coronary disease and thus take the necessary precautions.

SUMMARY AND CONCLUSIONS

1. A case of coronary thrombosis in a twenty-one-year-old white male following hyperthermy is presented.
2. Attention is drawn to the fact that many young adults have coronary disease undetectable in the usual physical examinations.
3. Fever therapy may precipitate an attack of coronary thrombosis.
4. Routine electrocardiograms should be a part of the routine examination of patients to be given fever therapy.

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RESPONSE OF MANIC-DEPRESSIVE PSYCHOSIS TO ALCOHOL—A CASE HISTORY.

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On July 9, 1940, I was called in to see Mrs. H. W. T., a white female, aged thirty-nine, weight 190, height five feet six inches, mother of two children aged eight and fourteen. Childhood history negative and family history negative. I have been her family physician for the last nine years. She has had no serious illness, but has passed urinary

calculi on three occasions. Two years ago she had a simple hysterectomy for fibroid tumor. Ovaries and tubes were left intact. She has been in excellent health up to the time of her present illness.

I found Mrs. T. talking constantly and very rapidly, exhilarated and restless. She jumped about on the bed and on the floor. The subjects of her

speech were unrelated, but religious topics were prevalent. A diagnosis was made of manic-depressive psychosis.

The history of onset given me was as follows: Up until two months before, she had been emotionally calm, performed her household duties, and was considered entirely normal in all respects. About that time she began to attend a revival meeting, in which she took increasing interest. After two weeks attendance she was observed by neighbors and friends to be very nervous. This nervousness increased gradually as she became more active in the revival services. She tried to convert several neighbors and became extremely agitated at their apparent indifference. Her husband told me she had not slept in seven nights.

About 1:30 P. M. July 9th, I gave her six grains of sodium amytal and she became worse. Thereafter she refused all food and medication. With Dr. Ferlazzo, my associate, I saw her again July 10th and she was given sodium amytal, milk and several ounces of whiskey by nasal tube. She then slept about four hours, and, on awakening, she voluntarily took another dose of whiskey and again slept several hours. Whiskey was administered at varying intervals in doses of two to three ounces for several

days. She was more cooperative after the first dose and on July 13th, she was well oriented and rational, but somewhat nervous. She was given small amounts of whiskey several times a day and resumed her household duties.

In late August while I was on my vacation, she attended church services for the first time since her illness, and immediately thereafter she refused all medication. She became stubborn, morose, antagonistic and actually violent toward her husband, children and friends. She heard voices and stated that she received messages from heaven by radio. She continued in this state. On my return September 17th, I again had to resort to the nasal tube for the administration of medication and food. Her former medication was resumed and on September 19th the patient again appeared to be in a normal state of mind, but somewhat nervous. She has continued so until the present time.

I am unable to predict the final outcome of this case, but feel reasonably certain that there has been a definite beneficial response to alcohol. In view of my results in this one case, and in deference to the reports of several psychiatrists, I believe that this type of treatment of manic-depressive psychosis will bear further investigation.

XEROPHTHALMIA AND KERATOMALACIA ASSOCIATED WITH OBSTRUCTIVE BILIARY CIRRHOSIS.*

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and

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Early signs of vitamin A deficiency, especially in infants, are not easily recognized clinically, and the diagnosis of such a condition is very difficult prior to the development of marked eye-symptoms. According to Bessey and Wolbach¹ the specific pathological changes due to vitamin A deficiency are found in many epithelial structures. There occurs atrophy of the epithelium concerned, reparative proliferation of the basal cells and differentiation of the new product into a stratified keratinizing epithelium. The replacement epithelium, regardless of the previous functions and structure in the region, is identical in all locations, and comparable in all its layers with

epidermis. In human infants keratinizing metaplasia has been found in the conjunctiva, cornea, mucosa of the nares, accessory sinuses, including the maxillary antrums, trachea, bronchi, pancreas, renal pelves, ureters, salivary glands, uterus and periurethral glands. The commonest and earliest appearance of the metaplasia is in the trachea and bronchi.² The early effect of the deficiency upon the respiratory mucosa is thought to be a satisfactory explanation of the frequency, severity, and persistence of the pneumonias that have been in most instances responsible for the deaths of infants suffering from vitamin A deficiency.²

Involvement of the eye occurs late. The earliest demonstrable change is metaplasia of the epithelium

*Read before the Richmond Academy of Medicine, May 14, 1940.

of the conjunctiva and cornea. Atrophy and metaplasia of the ducts of the lacrimal glands contribute to the consequences of the accumulation of keratinized cells in the conjunctival sac. The cornea becomes vascularized, edematous, and infiltrated with leucocytes. Necrosis of the cornea may occur beneath intact hyperkeratotic epithelium.² Ulceration may follow, and prolapse of the iris through the cornea may occur.

As general or secondary effects of vitamin A deficiency in infants as well as in laboratory animals Blackfan and Wolbach² list the following: (1) loss of weight; (2) anemia; (3) cessation of growth of bones; (4) degenerative changes in skeletal muscles; and (5) lymphoid hypoplasia.

In connection with the early detection of signs of suspected A avitaminosis the points for special consideration are² (1) analysis of the history regarding adequacy or inadequacy of vitamin A or its precursor carotene in the diet; (2) the consideration of vomiting and diarrhoea and of other morbid processes interfering with the metabolism of fats, especially such as chronic generalized infections, and diseases of the liver, gall-bladder, and pancreas; (3) the appearance of night blindness and xerosis of the cornea with white deposits in the scleral conjunctiva; (4) the demonstration of keratinized epithelial cells in the scrapings from the cornea, nose and other epithelial membranes where keratinized cells are not normally found.

Vitamin A deficiency may be due to inadequate intake of the vitamin or to some factor or factors interfering with its absorption and utilization. Milk, butter, eggs, green and yellow foods of plant origin and especially green leafy vegetables, cod liver oil, halibut liver oil and certain other fish liver oils are among the rich natural sources of vitamin A or its precursor, carotene,^{3, 4, 5} and if included liberally in the diet of the normal child provide an adequate amount of this factor.

Although the intake of vitamin A may be adequate, evidence of deficiency may result from failure to absorb and assimilate it in sufficient amount. Assimilation and storage of the fat soluble vitamin A and its precursor carotene are closely related to the digestion of fats, and conditions interfering with the solubility, together with incomplete absorption of fat, curtail materially the amount of vitamin A available for storage and utilization.² Clausen³ states that ex-

clusion of bile from the alimentary tract interferes with absorption of carotene and possibly of vitamin A. Microscopic evidence of vitamin A deficiency has been found in infants dying of congenital atresia of the bile ducts.^{6, 2}

Clausen and McCoord⁷ in a study of the carotinoids and vitamin A of the blood found that infection causes a prompt and considerable fall in the concentration of carotene, xanthophyl and vitamin A in the blood. During the acute stage of catarrhal jaundice and in celiac disease low plasma values for carotene, xanthophyl and vitamin A were also found. This was thought probably to be due to poor absorption.

Similar observations on the poor absorption of vitamin A in the presence of acute catarrhal jaundice have been made by Breese and McCoord.¹¹ They found that bile salts given by mouth appeared to aid in the absorption of vitamin A by these patients.

The same investigators¹² in a study of ten cases of celiac disease found a marked inability of these patients to absorb vitamin A in a normal manner. The absorption was slow and the blood values abnormally low.

Blackfan and Wolbach² report the study at autopsy of eleven patients in whom there was histologic evidence of vitamin A deficiency. Six out of the eleven showed extensive pancreatic disease and one showed congenital atresia of the common bile duct. Though the connection was not proven, they thought it reasonable to assume that this pancreatic lesion, if extensive might be responsible for the failure to utilize fats, and hence vitamin A even in the presence of an adequate intake.

In studies by Andersen^{8, 9} and by Blackfan and May¹⁰ on cystic fibrosis of the pancreas necropsies showed this condition occurring in cases with clinical and histologic evidence of vitamin A deficiency, sufficiently often to suggest that the vitamin deficiency might be due to the pancreatic disease which prevented the normal absorption of fat and the fat soluble vitamin A from the intestinal tract.

Xerophthalmia and keratomalacia, late manifestations of gross deficiency of vitamin A, are rarely encountered in the U. S. and Canada¹³ though not uncommon in the Far East. In the Philippine General Hospital during the ten-year period from 1927 to 1937 out of 22,374 total admissions there were forty-seven cases of keratomalacia.¹⁴

During the twelve-year period of 1920 to 1932 there were in the Harriet Lane Home, Johns Hopkins Hospital, Baltimore, two cases of xerophthalmia out of 52,884 admissions; in the Children's Memorial Hospital, Chicago, there were two cases out of 150,000 admissions; in the Children's Hospital, Boston, there were five cases out of 9,265 admissions!¹³

The case here reported falls in the group receiving at least a minimal adequate amount of vitamin A but unable to utilize it.

Baby D. M. was a premature baby, born June 6, 1939, at approximately seven and one-half months' gestation. She weighed four pounds at birth. Her mother was said to have had "thyroid trouble" for five years preceding the birth of this child. One other child had been born prematurely and died when sixteen days old. The father was living and well. The baby, though small, was said to have been in good health until it began to have trouble with its eyes when three and one-half months old. At this time the mother noticed a "white film" in both of its eyes. It had been fed on a formula of evaporated milk all its life, but had received no cod-liver oil or other vitamin preparation prior to that time. The parents were from an illiterate rural laboring class, and the baby had received no medical attention since birth until the time that something was observed to be wrong with its eyes. It was then taken to the family physician who referred it for an ophthalmological examination. At this time the baby was approximately four months old. Examination† revealed an advanced stage of xerophthalmia and keratomalacia. The recorded description of the condition at that time was as follows: "Both eyes showed a lustreless, nodular and wrinkled appearance with the cul-de-sacs more or less filled with a yellowish, frothy exudate. Both corneas were very soft, having the general appearance of melting ice upon a pond. This appearance of the cornea is spoken of as necrotic, not in the sense that it is due to secondary infection but simply a generalized softening of the corneal tissue. There was an entire absence of any vascular reaction in either the conjunctiva or the corneas."

The baby was put on cod-liver oil and hospitalization for pediatric study and treatment was advised. The parents delayed following this advice and it was two weeks later before the baby was admitted to

Johnston-Willis Hospital on October 25, 1939, for further care.

Physical examination then revealed a small undernourished white female infant, moderately dehydrated, lying quietly, without any apparent discomfort. The weight was six pounds, twelve ounces. The skin was slightly jaundiced. The fontanelle was one and one-half inches in diameter and slightly tense. Throat was moderately congested, and the baby had a slight cough. Heart and lungs were normal. Abdomen was slightly prominent and the liver was considerably enlarged, the lower border being palpable at the level of the umbilicus. Spleen was not palpable. Eyes showed a moderate amount of whitish foamy discharge. There was marked opacity of both corneas with ulceration and sloughing. The conjunctiva had lost its lustre and presented small whitish spots, giving it a cloudy appearance. The lids were not swollen. A corroborative diagnosis of xerophthalmia and keratomalacia was made.

Urinalysis showed a trace of bile and a slight amount of albumin.

Blood examination showed R.B.C. 3,300,000; W. B.C. 22,400 with 50 per cent P.M.N., 47 per cent lymph., and 3 mononuclears.

Subsequent urinalyses and blood counts were essentially the same.

On account of the tense fontanelle a spinal tap was done with normal findings, including a negative spinal fluid Wassermann. Kahn tests on the blood of both mother and baby were negative.

COURSE IN HOSPITAL

The baby was given a formula of evaporated milk; eight drops of percomorph oil three times a day; and offered three ounces of orange juice daily. The feedings were taken very poorly, and some of these were regurgitated or vomited. Lactic acid was then added to the formula; and later skimmed milk substituted for evaporated milk. After a few days Smaco carotene in oil, ten drops daily, was added, daily inunctions with cod-liver oil were given, and percomorph oil was used locally in the eyes. Other changes in feedings included periods on "Olac", and on a "skimmed milk-pabulum-dextrimaltose-gelatin" mixture. A liquid vitamin B complex, and cevitamic acid were also included in the dietary.

The stools presented a grayish acholic appearance.

†By Dr. R. H. Courtney.

A red cell fragility test showed initial hemolysis at thirty-eight, suggesting an obstructive type of jaundice. Indicative of the same type of jaundice were a delayed direct van den Bergh test and a positive indirect van den Bergh.

A duodenal tube was passed, using the fluoroscope to determine that it was in proper position. Two c.c. of 50 per cent magnesium sulphate were given through the tube and the duodenal contents aspirated at five to ten-minute intervals. Of the three specimens removed one showed a questionable faint trace of bile; the others showed none. From these findings a congenital obstruction of the bile ducts was suspected. Pancreatic extract and bile salts were then given after each feeding, following which the stools took on a normal yellow appearance.

After a few days in the hospital both corneas ruptured and a portion of the iris protruded through the perforations. Subsequent to the institution of therapy the discharge from the eyes diminished; there was definite evidence of healing of the corneas by fibrosis and the conjunctiva took on a dry shriveled appearance. However, the baby failed to gain weight and gradually lost ground.

The temperature was normal on admission but during the next two weeks there were occasional slight fluctuations under 101. These febrile periods were attributed to the slight upper respiratory tract infection that was present on admission and which persisted throughout the stay in the hospital. A slight cough was also present most of the time.

During the third week after admission a few fine moist rales were first detected over the base of the right lung. These persisted during the next two weeks and again there were intermittent short febrile periods; but the highest temperature was only 101.4. During this time the baby became gradually weaker and died on November 25th.

In the absence of the pathologist, Dr. R. D. Bates, the autopsy was performed by a member of the surgical staff and a pathological report on the organs removed was made later by Dr. Bates.

At autopsy, the baby weighed six pounds, three ounces. The eyes showed definite fibrosis of the cornea with shrunken globes, but they were not removed for section; the gall-bladder was small and shrunken; the cystic duct and common bile ducts were quite small but patent. Grossly the pancreas

appeared normal, but unfortunately it was not removed for microscopic examination. The description by Dr. Bates of the organs removed was as follows:

Gross Description: (Organs received in laboratory).

The lungs are smooth and spongy in consistency. There is moderate amount of congestion of the lower lobe of each lung. No emboli could be demonstrated in pulmonary arteries.

The liver is swollen. It is deeply bile stained, being dark green in color and showing diffuse speckling. The gall-bladder is small and partially collapsed. It contains a small amount of thick bile.

The spleen and kidneys present dull "parboiled" appearance usually associated with cloudy swelling. No evidence of inflammation. The spleen is slightly enlarged for a child of this age.

Anatomical Diagnosis:

1. Icterus, with congestion of liver.
2. Cloudy swelling of kidneys.
3. Bilateral broncho-pneumonia—lower lobes—terminal.

Microscopic:

Lungs: Sections show scattered areas of consolidation centering around bronchioles. There is peribronchial leucocytic accumulation, many of which are polymorphonuclears and the lumen of the involved bronchioles filled with fibrino-purulent exudate.

Spleen: The sinuses are distended with blood. There are numerous hemorrhages and the Malpighian corpuscles are obliterated. The capillaries are distended throughout.

Liver: There is mild capillary hyperplasia and moderate proliferation of fibroblasts. The liver cells are transparent and contain bile pigment typical of starvation process. Some areas show destruction of liver cells and replacement fibrosis.

Kidneys: The tufts in many of the glomeruli are hazy and blunted. The cells lining the tubules are faintly stained and contain granules; occasional albumen casts are seen. There is moderate lymphocytic accumulation in the interstitial tissue.

Final Diagnosis: (From study of organs removed).

1. Obstructive biliary cirrhosis.
2. Cloudy swelling of kidneys.

3. Chronic passive congestion of spleen.
4. Broncho-pneumonia—bilateral—lower lobes (terminal).

SUMMARY AND CONCLUSIONS

In the case reported keratomalacia and xerophthalmia developed in an infant receiving an adequate amount of vitamin A in its diet but unable to utilize it. Autopsy showed an obstructive biliary cirrhosis.

The cause of the biliary cirrhosis is not known but it is believed that the absence or deficiency of bile in the intestinal tract interfered with the normal digestion of fats and prevented the absorption of vitamin A to such a degree as to bring about the keratomalacia and xerophthalmia characteristic of a gross deficiency of this vitamin.

The fact that the microscopic study of sections from the lungs did not show the epithelial metaplasia usually associated with vitamin A deficiency may have been due to the treatment given during the month in the hospital.

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A NON-OPERATION TREATMENT OF CARBUNCLES.

BEN A. RICE, M.D.,
Forest, Virginia.

Dr Costas' definition of carbuncle is: "A circumscribed inflammation of the deeper layers of the true skin and of the subcutaneous tissue with fibrinous exudation, multiple foci arising, and the tissue adjacent to each necrotic plug becoming gangrenous".

Romanis and Mitchner say it is a result of infection of the subcutaneous fat by a pyogenic organism. I will add, probably by a variety of organisms, aerobic, anaerobic; some heat resisting; others killed by heat; still others killed by light.

Rose and Carliss regard some trauma has caused a local extravasation of blood or other local diminution of vitality.

There seems to be a consensus of opinion that various staphylococci have various degrees as well as variety of exotoxins.

Campani and Grossi demonstrated that lack of general resistance is a causative factor. Workers in tin never have boils or other superficial pyogenic infection. But that does not prove that all pyogenic infections are cured by salts of tin. If it did, none of

us would have them, because all of us eat canned food to more or less extent and must, necessarily, get more or less of the salts of tin.

Piersol says that a carbuncle is an exaggerated form of boil and owes its clinical distinction and pathological features to the nature of the tissue—the skin of the back of the neck, the back, the hairy back of the hand and fingers, and the upper lip—in which it originates. In these regions the skin is very thick, tough, and forms the bases of hair follicles; clefts of true skin filled with fat, the columnae adiposae of Warren, extend downward for variable distance to reach and become firmly bound to the underlying fascia. Because of the anatomical arrangement arising in an infected follicle, the infective process, failing to reach the surface, burrows downward around the column to reach the surface of the fascia. It now travels along the fascia, and, reaching an adjacent column, burrows upward toward the surface. This continual travel along the fascial surface and upward extension along the columnae adiposae

accounts for the multiple openings so characteristic of carbuncles. The prognosis in staphylococcal infection varies, depending upon area of infiltration and the amount of systemic poisoning. The location of the lesion is an important factor. The high mortality associated with carbuncles of the face is generally known. Bullock in 1912 showed from statistics that 22 per cent died in facial carbuncles. The upper lip appears to be the most apt to end in death.

COMPLICATIONS

Kauffman claims that the original extent of the lesion, carbuncle, or multiple boils, in 75 per cent of the cases, rather than the virulence of the organisms, seems to influence metastasis. In young people, secondary infection is most apt to strike in the bones, while in adults the transfer is usually to the soft parts. The kidney is most frequently the involved soft part. Metastasis is very rare by the lymph stream. Thompson collected thirty-three cases of carbuncles of the kidney and found that with very few exceptions the patient was healthy, save for the staphylococcal infection of the skin. Abbit says a carbuncle of the neck was usually the primary focus, the symptoms suggesting secondary kidney involvement and continuous malaise and intermittent fever arising from two to eight weeks after the primary infection. A positive diagnosis can only be made by an operation. Fever with chills, associated with pain and swelling in the loin within a few weeks from the initial infection, would make one suspicious.

TREATMENT

Quoting from Piersol's *Cyclopedia of Medicine*:

"The therapeutics of staphylococcus infection is legion. The multiplicity of data concerning the treatment of these infections indicates that no specific standard of therapy has yet been evolved. While, as Christopher indicates, classification is impossible, treatment can best be considered under the following outline modified from the one he presents.

I. Prophylactic treatment.

II. Local treatment:

(A) Mechanical:

1. Incision by knife, including excision.
2. Incision by cautery, including radio knife.
3. Ignipuncture (white-hot needle).
4. Incision by chemicals.
5. Rest.

(B) Chemical:

1. Cataplasm and softening poultices:
 - (a) Unguents.
 - (b) Flaxseed.
2. Hypertonic solutions:
 - (a) Saturated boric acid.
 - (b) Aluminum acetate.
 - (c) Hypertonic sodium chloride.
3. Antiseptic applications:
 - (a) Phenol.
 - (b) Iodine.
 - (c) Ichthyol.

(C) Heat:

1. Hot fomentations.
2. Dry heat.
3. Diathermy.

(D) Irradiation:

1. X-ray.
2. Irradiated substances.

(E) Biological:

1. Autoblood circuminjections.
2. Horse serum.
3. Pier's hyperemia.
4. Bacteriophages.
5. Bacterial filtrates.

III. Systemic treatment:

(A) Biological:

1. Vaccines.
2. Insulin.
3. Non-specific protein therapy.

(B) Pharmaceutical:

1. Sulphur.
2. Tin.

(C) Dietetic measures, laxatives, fluids, rest.

IV. Anesthesia.

V. Prophylaxis: The primary factor in the prophylactic treatment of furuncles and carbuncles is strict bodily cleanliness. This includes general cleanliness, avoidance of scarifying the surface and protecting such areas prior to their infection. Likewise, it means keeping areas adjacent to any local pustular lesion clean, in order to avoid secondary transfer of the infection."

For the past twenty-five years I have not considered the knife in the management of carbuncles, except when it burrows beneath the fascia.

In treating carbuncles, the first thing to do is to examine the patient—the urine for sugar, for albumin, casts or whatever; the blood for anaemia, for

white cells, etc.; the heart, lungs, glands, teeth, tonsils, and anything which would lower the resistance, not forgetting to look into the psychology of the patient. Some worry is frequently at the bottom of the whole thing, and can be helped a great deal by sympathetic explanation and encouragement.

The only excuse for this paper is that I have had 100 per cent recoveries, without any help from the knife, over a period of twenty-five years. I express it that way because I punctured one—without benefit from the puncture.

My routine treatment is, locally, hot wet solutions of magnesium sulphate (half saturated solution) kept up all waking hours. Around just outside of open wound each day, ichthyol 25 per cent in some base; once or twice daily twenty-minute applications of light and heat by means of a one hundred and fifty-watt bulb as close as can be endured. During the application of heat and light there is a continuous outpouring of serum or pus which I keep wiped off with "S. T. 37". Internally, the patients nearly

always need some form of iron. I always give it. Also, they need lime in some form. I usually give a quarter grain of calcium sulphide every two hours, which seems to increase the facility for drainage, which is the most important part of the treatment. If the patient's appetite is low, I give three grains of pancreatin with calcium lactate, or diphosphate or gluconate. Rest, mentally and physically, is essential. One case with a large carbuncle on the back of the neck could rest best leaning forward on pillow and folded arms.

In diabetes I give the same treatment, except I increase insulin to keep the blood sugar within limits and keep the patient on a strict buttermilk diet with one glass of orange juice in twenty-four hours.

Since writing this in 1938, I have had a very limited experience with the use of staphylococcus toxoid, which was not sufficient to come to any conclusion. The results were not encouraging.

Apparently I have had better results from the use of sulfathiazole.

OSSIFYING FIBROMA—THENAR SPACE.

BERNARD H. KYLE, M.D.,

Lynchburg, Virginia.

A negro male, age thirty-two, occupation—laborer, presented himself on August 1, 1940, complaining of an enlargement in the palmar surface of the left

under the thenar muscles of the left hand with marked tenderness on pressure. There was no disturbance of motion or sensation in the fingers. Pain was not present except when pressure was made over the tumor. From the location and appearance of this tumor, it was thought that it might be a xanthoma.

Patient was admitted to the hospital and under general anesthesia incision was made, paralleling the thenar crease, locating the large branch of the median nerve, which courses along the border of the flexor pollicis brevis. A blunt dissection was made between the flexor pollicis brevis and the abductor pollicis brevis, separating these muscles, locating the tumor in the thenar space under the abductor pollicis brevis. The tumor, about the size of a hickory nut, readily came into view. It was encapsulated, having a capsule about a quarter-of-an-inch thick, in the center of which was dense bone formation.

Pathological report was an ossifying fibroma.

Following the operation, the function of the hand is good; however, there is a slight disturbance in sensation to the palmar side of the tip of the thumb.



hand, which he stated had been present and increasing in size for a period of three years.

Examination showed a large, firm, movable mass

The Council Medical Society of Virginia

The Council of the Medical Society of Virginia met at the Society's office on Tuesday, January 21, 1941, at 11:00 a. m., with the President, Dr. Walter B. Martin, presiding. Others present were: Drs. Julian L. Rawls, James L. Hamner, W. L. Powell, A. F. Robertson, Jr., and A. D. Hart, councilors; Drs. J. M. Emmett, J. E. Knight, and H. B. Mulholland, vice-presidents; Dr. Wyndham B. Blanton, editor; Dr. I. C. Riggins, State Health Commissioner; Dr. Dean B. Cole, chairman of the Legislative Committee; Dr. Hugh H. Trout, State Representative on the National Medical Preparedness Committee; and the secretary.

A quorum being present, Dr. Martin asked the pleasure of the Council with regard to the minutes of the October 1940 meeting of this body, as published in the November MONTHLY. It was thought unnecessary to read these and they were accepted as printed.

Dr. Martin said that in accordance with action taken at the last meeting, the committee composed of Drs. Bowyer, Blackwell and himself had bought a silver tray and bowl for Dr. Blanton, in appreciation of his services as editor, and a note of appreciation from Dr. Blanton was read.

Committee reports were next called for and, Dr. Blanton, chairman of the Program Committee, not having arrived, the secretary stated that the exact dates of the next annual meeting had been left to the Program Committee, and they had selected October 6, 7, and 8, the idea being to have the House of Delegates and Council meet on Monday, the 6th, with the first scientific session to open on Tuesday at 9:30 a. m. Upon motion, these dates were approved. The Committee also recommended that the technical exhibits be handled through the State Society office, with local assistance as to details, that the income from the exhibits might be used for general expenses of the meeting. It was decided by the Council that the money received should belong to the State Society but that a committee of doctors from both Norfolk and Princess Anne County Societies be appointed to cooperate with the secretary in arranging these exhibits. Attention was called to the fact that the House of Delegates had adopted a resolution in 1923 that "in future, all money received from commercial exhibits be given to the local society entertaining the State organization", so motion was made that the decision of the Council be effective for this meeting but recommendation be made to the House of Delegates at its next session that the Society return to the former plan of having money from exhibits paid them for necessary expenditures, instead of going to local societies as for the past seventeen years, as members now pay individually for entertainment. Adopted.

At the last meeting of the Council, a letter was referred to the Program Committee, in which a suggestion was made that there be some official relation between the State Medical and Dental Associations. The Committee discussed this and felt that the program as arranged for the coming meeting would be so crowded that they did not see their way clear to include papers on dental subjects. The President felt there was nothing to do but to accept their recommendation at this time but thought this should be referred back to the Program Committee with the request that they make recommendations for future consideration. This was put as a motion and adopted.

Dr. Cole, upon request, then gave a report on the activities of the Legislative Committee, stating that they felt a good deal had been accomplished. He presented a bill which had been approved by himself, the President, and Dr. Hundley, chairman of the Medical Economics Committee, to be paid from the special fund from increased dues, and it was moved and adopted that this be paid.

Dr. Knight told of a case in their community which had come to trial and said the cost would be \$250.00. He asked if they would have financial aid from this fund, to which Dr. Cole replied that he felt the Committee would agree to pay half the amount. Dr. Robertson asked if the Fauquier Society had applied to the State Board of Medical Examiners for help and said they have a fund to assist in cases they felt should be prosecuted and, if not used, it reverted to the State treasury. Dr. Martin said it was his opinion that the local community should always pay part of the expense as they are ones most helped. He also felt that, if the Legislative Committee could secure an injunction in the cases now under consideration, it would mean a good deal. Dr. Cole recommended that one-half of the cost of the Fauquier case be assumed by the Special Fund if it did not amount to more than \$125.00, and this was voted on and adopted.

Dr. Cole said his committee had an appeal from another section of the State and they had offered to pay half the expenses in this case but had heard nothing further. He had discussed with the attorneys the best means of procedure and they, as well as Mr. Holloway of the Bureau of Legal Medicine of the American Medical Association, felt an injunction should be secured in all cases coming to trial, if and when deemed advisable. He asked the opinion of the Council about this and it was moved, seconded and adopted that this be done.

Dr. McGee, chairman of the Committee on Scientific Exhibits, had sent a report asking that the Council consider the advisability of purchasing an X-ray frame

work for use in scientific exhibits, this cost to be in addition to the amount allowed his committee in the budget. Motion was adopted to ask the committee for more information on this subject before a recommendation could be made.

Another suggestion from Dr. McGee was that there should be a standing committee on Technical Exhibits. It was felt it would be necessary to have a local committee to assist in details, so it was moved and adopted that the plan suggested earlier in this meeting be adhered to.

Dr. F. J. Wampler, chairman of the Committee on Industrial Health, presented the following report:

The Committee on Industrial Health met in Richmond on December 5. All members of the Committee were present except Dr. Hawkins, of Waynesboro. Dr. Martin, president of the Society, met with us. The Committee organized by electing Dr. J. B. Porterfield, of the State Health Department, as secretary of the Committee.

It was decided that the most important thing the Committee could do this year would be to try to get each of the component societies to have either a complete program during the year on industrial health or have at least one speaker on the subject at one of the meetings during the year. It was decided that we would work along this line.

It was also decided to act with other groups as co-sponsor of the symposium on industrial health to be held at the Medical College of Virginia on September 11 and 12, 1941.

The chairman and the secretary of the Committee attended the meeting of the Third Congress on Industrial Health sponsored by the Council on Industrial Health of the American Medical Association in Chicago on January 13, 14 and 15. The Congress had an excellent program and the attendance must have been at least twice as large as the attendance at the Second Congress, which was held last year.

Respectfully submitted,

FRED J. WAMPLER, M.D.,
Chairman.

This was ordered received and filed.

Dr. Lehman, chairman of the Cancer Committee, reported the certification of the Elizabeth Buxton Hospital Tumor Clinic, Newport News, for the treatment of indigent cancer cases, since their report to the House of Delegates. This approval was made under the regulations adopted by the House of Delegates in the supplemental report of the Committee last summer. This report was received and filed.

Several other committee chairmen advised that there were no special activities to report at this time.

Announcement was made of the consolidation of the Southside Virginia Medical Association with the Fourth District Medical Society, retaining the officers and by-laws of the last named, the society to be known as the Fourth District and Southside Virginia Medical Society. Request was made for a new charter to replace that now in the name of the Fourth District Medical Society. This was granted.

Upon request, Dr. Riggin told of a meeting with the Governor, at which time plans were made for organiza-

tions throughout the State to assist in caring for patients with influenza should there be an epidemic. Committees had been appointed in a number of counties but he did not think their services would be needed at this time. They would be available in case of another wave of the disease.

He also told of the set up for medical service and use of hospitals in the State Defense program, in emergencies arising from accidents incident to explosions, fires, etc., which would call for more help than could be given locally.

Dr. Martin said he had contacted the councilors, asking them to find out which doctors would be able and willing to go anywhere in the State for such service, and also what hospital facilities might be available, but had not received many answers yet.

Dr. Rawls asked how much this set up would overlap work of the Red Cross, to which Dr. Riggin replied he did not think the work would conflict. He said the State Society would not be expected to get hospital facilities, but only the names of physicians available, and the type of work for which they would be willing to be called.

Dr. Martin asked if the Council approved what had been done with regard to securing this information and the members moved approval of his action.

Dr. Emmett asked how many doctors would be needed and Dr. Martin thought it might be well to have a list of about one hundred from which to make selections.

Dr. Blanton felt the plan should go even further and have some one designated to be in charge of each situation. Dr. Martin said the files would be in Dr. Riggin's office and he would be in charge.

Dr. Robertson thought, Dr. Riggin could designate a man to take charge of the situation, according to the community needing assistance, if he has the list of doctors, and offered this as a motion which was adopted. Dr. Hart said he also felt that a local man who knew the hospital situation would be more suitable in each case.

Dr. Martin said this brought up the idea of having a "contact" man in each county, on a more or less permanent basis. Several councilors thought this suggestion good, and, after discussion, motion was made that appointment of these men be made by the Presidents of local societies but by the councilors for counties where there is no local society. Dr. Martin thought these contact men would be helpful also when Legislature is in session and thought the Council might endorse the plan in principle but that it would have to be worked out later. The motion was then seconded and adopted.

Dr. Cole said they had already started the plan of having contact men in their legislative work and Dr. Martin thought it might be well to send a complete list of those they had selected to the Society's office and said he would be glad to get out a form letter to be used by the councilors in securing these men.

Dr. Martin presented the following letter from Dr.

E. W. Lacy, Jr., State Health Consultant to the National Youth Administration for Virginia:

DECEMBER 28, 1940.

DEAR DR. MARTIN:

Recently the President designated the National Youth Administration as an emergency defense organization, and as a part of this program a state-wide health project has been authorized by the Administration.

Here in Virginia we are planning to have all youth working on out-of-school projects examined by competent licensed physicians, and whatever remedial measures necessary carried out. In certain cases the services of specialists will, of course, be needed, especially in cases of ear, nose and throat defects, repair of hernia, etc. We intend that the preliminary examination be thorough and the examining physician will be expected to classify each youth into certain groups, according to their physical fitness.

Here in Virginia we have secured the co-sponsorship of the State Board of Health and the State Board of Education. It is also our desire to secure the endorsement of our program by every local Medical Society, as well as the State Society.

Our program has the full endorsement of the Defense Committee of the American Medical Association, and we feel that for its proper conclusion we need the cooperation of our own State Medical Society, since it will be impossible to go before each and every county and local medical group. We would appreciate your giving this matter prompt consideration, bringing it before your Executive Board, and presenting it to the physicians of Virginia through the VIRGINIA MEDICAL MONTHLY.

Please let me know your reaction toward this program, and a prompt action and reply will be greatly appreciated.

Very sincerely yours,

E. W. LACY, JR., M.D.,
State Health Consultant,

National Youth Administration for Virginia.

Dr. Riggin was asked what he knew of this project and explained that the NYA has a set up in Virginia which is accomplishing some good work but many physical defects are found in the youth. They had asked him to have some physicians designated to help them in making examinations, etc., but there was no fund available for this purpose. He thought the suggestion a good one if funds could be made available.

Dr. Emmett moved that Dr. Lacy be advised that the Council approved his request in principle, if they could formulate an adequate program, and, when they submit a plan which will make it possible to carry out the work, the Council will be glad to consider endorsement of the program. This was seconded and carried.

Dr. Martin said he had sent letters to the councilors with regard to fees recommended for laboratory work done on draftees on the requisition of the examining physicians and stated he had had the approval of most of the councilors who had conferred with laboratories in their communities and asked if they wished to take further action on this. It was moved and carried that the fees as recommended be approved.

In answer to an inquiry from Dr. Rawls, it was thought there would be State funds available for these fees.

Dr. Trout, being asked to give the Council information with regard to Medical Preparedness, stated that the American Medical Association had sent a second list of names showing a large number who had not filled out and returned the questionnaires and asked the councilors when they receive the new lists from the Secretary to supply such information as they can on the questionnaires where they get no answers, and turn them in. He also said he felt that Dr. Trice had worked very hard and earnestly in the set up of Selective Service Boards, but felt it might be well to ask doctors on these boards to take a little more time in their examinations of draftees, and to make more use of their Advisory and Consultant Boards, with special reference to mental and other defects, so they would not have to be rejected later by Induction Boards. Family history from a doctor familiar with the man and his family would be a great help. By eliminating mental defectives at this time, the Government would be saved a large expenditure of money later. Motion was adopted that Dr. Martin secure names of the doctors on the Selective Service Boards and write them letters along this line.

The Secretary said that the question had been raised by a couple of out-of-State members as to the increase of dues for those living out of Virginia, but the Council felt no exception should be made as the dues had been placed at \$7.00 through amendment to the By-Laws by the House of Delegates.

In the case of members called to service by the draft, it was felt their dues should be remitted when they request it, after they close office and are actually in the Service, and the Secretary was instructed to so notify those members who had tendered resignations because of this.

Dr. Riggin was asked if he could give information as to fees paid physicians for services to patients in the jails, and he said he would try to find out something of the set-up in the near future. Dr. Martin said he understood there were gross defects in the present system, and, if the Council wished, he would appoint a special committee to work with the State Health Commissioner in compiling information along this line, with instructions that they make recommendations to be referred to the Legislative Committee to be brought later to the attention of proper authorities. This was put in form of a motion and adopted.

Dr. Knight said some of their members felt their county society should be re-organized and asked if this might be done by surrendering the old charter and securing a new one. It was moved that this be referred to the Judicial Committee.

Adjournment followed.

AGNES V. EDWARDS,
Secretary.

Approved:
WALTER B. MARTIN,
President.

Mental Hygiene Activities

For several years Dr. Garnett of V.P.I. has been studying the marginal families of Virginia; marginal families and those whose income is not more than five hundred dollars (\$500.00) a year. The women of this group have an average offspring of eight, practically none of the individuals pays taxes of any description, yet the State and Nation pay for the keep of the majority in jails, in State Hospitals or on relief. This great group has existed in the State for generations with very little done to better their conditions. Is it a cause for wonder that when they come up for induction into our modern army they will be found physically and mentally unfit?

The army must not be considered in the light of a sanatorium or a corrective institution. The modern army is for a very select group, composed of men who are stable and strong. They must be able to stand the strain of training and also we must be sure that eight years from now they will still be stable and strong. It is no disgrace to be turned down by an Examining Board, as many men are better suited for other pursuits where they can serve to a much greater degree—since in total war each person serves. On the other hand, it should be a great honor to be selected as worthy to be among the picked men who will be the first line of defense.

Mental Hygiene forces should seize this opportunity to rehabilitate those whose instability is brought to light by this inspection of the youth of the State. Such a rehabilitation will be a community problem which can be solved through community education. The medical profession of the State are the best fitted to lead in this campaign. The Mental Hygiene Society of Virginia has arranged four programs during the spring in order to stimulate the medical profession along these lines. On March 11 there will be an afternoon and night meeting in Danville. In the afternoon Dr. Joseph Barrett of Southwestern State Hospital will speak on Adolescent Problems; Dr. James Pettis of Western State Hospital on Pre-Adolescent Behavior Disorders. At night before the Danville Medical Society Dr. Pettis will talk on The Treatment of Mental Disease in a State Hospital and Dr. David Wilson on the Early Diagnosis of Mental Diseases.

In April the Mental Hygiene Section of the Virginia Conference of Social Work at the meeting in

Roanoke will be combined with the Medical Section of that Conference. On Friday, April 25, the morning program will be on The Responsibilities of the Community to the Problems of Adolescence in Virginia. In the afternoon there will be discussion of the Effect of National Emergency on Adolescence. It is hoped to have two guest speakers of prominence at this time. On Saturday morning the results of the Venereal Disease Control Program will be presented by well known authorities in that field.

On the night of May 8, during the meeting of the American Psychiatric Association in Richmond, there will be a joint session of the American Psychiatric Association and the Mental Hygiene Society of Virginia. Dr. Abraham Myerson of Boston will speak on "The Influence of Personality Factors on the Selective Service and Defense Program from the Psychiatrist's Point of View". Colonel Rowntree, better known to the medical profession as Dr. Rowntree of the Mayo Clinic but now in charge of the Medical Section of the Selective Service System, will discuss the "Attitude of the Selective Service Toward the Mentally Unfit".

At the Institute of Public Affairs at the University of Virginia during June and July one afternoon and evening will be given to Mental Hygiene topics. In the afternoon the topic, "National Regimentation and Its Effect on Personality", will be the subject of one panel discussion, while the other panel discussion will be based about "Personality Problems Incident to National Mobilization". The evening meeting will consist of two addresses: "Personality Patterns and Placement in National Defense" and "The Immediate Problems of National Morale".

It is hoped that the members of the Medical Society of Virginia will make a special effort to attend these meetings.

DAVID C. WILSON, M.D.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for January, 1941, compared with the same month in 1940, follows:

	January 1941	January 1940
Typhoid and Paratyphoid Fever	9	11
Diarrhea and Dysentery	53	46

Measles	842	107
Scarlet Fever	194	219
Diphtheria	41	72
Poliomyelitis	3	2
Meningitis	6	4
Undulant Fever	2	1
Rocky Mountain Spotted Fever	0	2
Tularaemia	8	18

SHELLFISH CONTROL

Effective sanitary safeguards, intended to provide some guarantee of safe and wholesome shell sea foods, have received increasing attention during recent years. Interest of consumers and consumer representative agencies have furnished the incentive for an increasingly high standard of physical quality in most of the marketing areas. Possibly of even greater importance, doctors and public health officials in general have through their activity brought into being a means of cooperative local, state and federal sanitary control over the production and marketing of these products.

Shellfish sanitation as a public health measure is operative through a relatively unique system of cooperative supervision by production, marketing, and coordinating regulatory agencies. Health authorities in the various producing states determine the sources of oysters and clams and ascertain the freedom of these sources from either constant or intermittent pollution; they formulate sanitary requirements with regard to handling, shucking, packing, and shipment of shellfish products, and through bacteriological control and sanitary inspection maintain supervision over all phases of production methods. When satisfied by means of this supervision that sources and production methods are satisfactory, approval of them is granted through certification of the individual dealers. In order to coordinate this approval and certification by state authorities they are in turn given the endorsement of the coordinating agency, the U. S. Public Health Service. The Service also disseminates information regarding certification by furnishing semi-monthly lists which carry the names of all approved shellfish dealers to local marketing control agencies throughout the U. S. and Canada. It then remains only necessary that city, county, and other local control agencies exclude products not bearing this state and federal approval and that they enforce necessary measures to prevent insanitary display, handling, and dispensing by retail stores.

In Virginia some 1,800 inspections and 2,000 bac-

teriological examinations are made each year of shellfish producing areas and packing plants to obtain information and supervise activities incident to production of shellfish. Based on these inspections and examinations, an average of about 400 dealers have been certified by the Virginia State Department of Health during each of the past five years.

State and federal officials are restricted in their efforts to assure the sanitary quality of shellfish as marketed unless local officials make full use of existing production supervision through recognition of certification and appropriate marketing restrictions. Physicians and public health officials can do much to initiate and support such a program where it does not now exist or where it is not fully effective. An appropriate inquiry of city or town officials, or advice to patients, as well as organized efforts to secure adequate local control of shell sea foods, may not only result in elimination of a potential health hazard, but will also assure a safe and wholesome diet adequate in iodine and manganese and other important food minerals.

Miscellaneous

Program of Southeastern Surgical Congress.

RICHMOND, VIRGINIA

MARCH 10, 11, 12, 1941

HOTEL JOHN MARSHALL

Monday, March 10, 9:00 A. M.

1. Robert L. Sanders, M.D., Memphis, Tenn.—Multiple Carcinomata of the Stomach: Case Report. Illustrated.
2. Frederick H. Falls, M.D., Chicago, Ill.—Ectopic Pregnancy. Illustrated.
3. R. Arnold Griswold, M.D., Louisville, Ky.—The Treatment of Recent Compound Wounds. Illustrated.
4. Bradley L. Coley, M.D., New York City—Conservative Surgery in the Treatment of Bone Tumors. Illustrated.
5. Hu C. Myers, M.D., Philippi, W. Va.—Duodenal Drainage in the Diagnosis of Gall Bladder Disease. Illustrated.
6. Gershom J. Thompson, Rochester, Minn.—Carcinoma of the Prostate: Its Conservative Surgical Treatment. Illustrated.

2:30 P. M.

7. Fred Rankin, M.D., Lexington, Ky.—Surgical Treatment of Adenomatosis of the Colon. Illustrated.
8. Fred M. Douglass, M.D., Toledo, Ohio—Surgery of the Biliary Tract. Illustrated.

9. Walter B. Martin, M.D., Norfolk, Va.—The Interdependence of Medicine and Surgery.
10. Willis C. Campbell, M.D., Memphis, Tenn.—Treatment of Compound Fractures. Illustrated.
11. Alfred B. Longacre, M.D., New Orleans, La.—Immunity in Staphylococcus Infections. Illustrated.
12. William L. Estes, Jr., M.D., Bethlehem, Pa.—Non-Penetrating Trauma of the Abdomen. Illustrated.

8:00 P. M.

The C. Jeff Miller Memorial Lectureship

13. Memorial to Doctors Miller and Long—T. C. Davison, M.D., Atlanta, Ga.
14. Presidential Address—Irvin Abell, M.D., Louisville, Ky.
15. The C. Jeff Miller Lecture.
Frank H. Lahey, M.D., Boston, Mass.—The Surgical Treatment of Gastric, Duodenal and Jejunal Lesions. Illustrated.
16. V. P. Sydenstricker, M.D., Augusta, Ga.—The Importance of Vitamin Treatment in Preparation and Post-Operative Care of Patients. Illustrated.
17. Brien T. King, M.D., Seattle, Wash.—A New and Function Restoring Operation for Bilateral Abductor Cord Paralysis. Illustrated.

Tuesday, March 11, 9:00 A. M.

18. E. S. Gurdjian, M.D., Detroit, Mich.—Pathology and Surgical Management of Acute Head Injury. Illustrated.
19. Everard A. Wilcox, M.D., and Robert Greenblatt, M.D., Augusta, Ga.—The Hormonal Therapy of Small Fibro-Myomata of the Uterus. Illustrated.
20. Frank Philip Coleman, M.D., and Gordon S. Seastrunk, M.D., Columbia, S. C.—Individual Ligation in Pneumonectomy and Extra-mediastinal Individual Ligation in Lobectomy—An Analysis of the Authors Series. Illustrated.
21. Parker C. Hardin, M.D., Monroe, N. C.—Cod Liver Oil Therapy of Wounds and Burns. Illustrated.
22. James R. Garber, M.D., Birmingham, Ala.—Realities in Obstetrics.
23. W. Lowndes Peple, M.D., Richmond, Va.—The Results of Radium Treatment of Cancer of the Cervix. Illustrated.

2:30 P. M.

24. Elkin L. Rippey, M.D., Nashville, Tenn.—Management of Gun Shot Wounds of the Abdomen. Illustrated.
25. Alfred I. Folsom, M.D., Dallas, Tex.—Some Minor Urological Procedures of Value to the General Practitioner. Illustrated.
26. J. M. Emmett, M.D., Clifton Forge, Va.—The Surgical Treatment of Carcinoma of the Stomach. Illustrated.
27. Charles F. Geschickter, M.D., Baltimore, Md.—The Endocrine Aspect of Chronic Cystic Mastitis. Illustrated.
28. J. Orville Morgan, M.D., Rocky Mount, N. C.—The Diagnosis and Treatment of Delayed and Immediate

Traumatic Rupture of the Spleen with Report of Cases. Illustrated.

29. Byrd Charles Willis, M.D., Rocky Mount, N. C.—The Diagnosis and Treatment of Delayed and Immediate Traumatic Rupture of the Spleen with Report of Cases. Illustrated.

7:00 P. M.

Banquet—The Virginia Room—Everybody Invited.

Wednesday, March 12, 9:00 A. M.

30. Temple Fay, M.D., Philadelphia, Pa.—Further Observations on Human Refrigeration. Illustrated.
31. Harley R. Shands, M.D., Jackson, Miss.—Cancer of the Ovary. Illustrated.
32. C. C. Howard, M.D., Glasgow, Ky.—Review of 6,000 Spinal Anesthetics from the Viewpoint of the Surgeon. Illustrated.
33. William G. Hamm, M.D., and Jos. Hiram Kite, M.D., Atlanta, Ga.—The Relief of Contractures of the Knee Following Extensive Burns. Illustrated.
34. Walter G. Stuck, M.D., San Antonio, Texas—The Prevention of Deformities from Compound Fractures. Illustrated.
35. Conrad G. Collins, M.D., New Orleans, La.—Management of Abortion. Illustrated.

2:30 P. M.

36. Gabriel Tucker, M.D., Philadelphia, Pa.—Cancer of the Larynx, Diagnosis, Treatment and Results with Observations on the Relation of Benign Tumors to Cancer. Illustrated.
37. J. Duffy Hancock, M.D., Louisville, Ky.—Mesenteric Tumors. Illustrated.
38. Robert B. McIver, M.D., Jacksonville, Fla.—Ureterocolostomy: A Study of Late Results. Illustrated.
39. Edgar F. Fincher, M.D., Atlanta, Ga.—Meningiomas. Illustrated.
40. Murdock M. Snelling, M.D., Gulfport, Miss.—The Treatment of Chronic Cervicitis and Allied Conditions with the Surgical Diathermy. Illustrated.
41. Justus C. Pickett, M.D., Morgantown, W. Va.—The Role of the Fascia in Low Back Pain. Illustrated.

The Quinine Industry.*

Since the invasion of Holland on May 10, there have been persistent rumors of Nazi attempts to interfere with the Dutch quinine industry. The actual facts appear to warrant the following statement.

Heretofore Amsterdam has been the headquarters of an industry which has assured the supply of this world-wide remedy for malaria. By royal decree the management of this quinine industry was transferred to Bandoeng, Java, on May 14, 1940.

We have been warned, although the warning was scarcely necessary, to have no communication with

*Reprinted from *Science*, December 20, 1940, Vol. 92, No. 2399, pages 579-580.

our former associates in Amsterdam for fear such correspondence might be diverted to Nazi ends.

Java is now the center of the world's quinine industry, where ample production is assured of both cinchona bark and manufactured quinine. The latter is produced at the Bandoengsche Kininefabriek, the largest quinine factory in existence. There is thus no danger of a quinine shortage anywhere in the world.

The quinine industry, now centralized in the Netherlands East Indies, is completely Dutch and completely determined that Holland's plight shall not be turned to Nazi advantage. That attitude also actuates those connected either with the sale of Dutch quinine here or with the research and educational program of that industry.

NORMAN TAYLOR, *Director*,
CINCHONA PRODUCTS INSTITUTE, INC.,
NEW YORK, N. Y.

U. S. Becomes Independent of Quinine Importations.

SUBSTITUTE DEVELOPED BY AMERICAN SCIENTISTS
PROVES TO BE JUST AS EFFECTIVE AS
FOREIGN PRODUCT

American science was declared to have made this country independent of foreign sources of quinine.

Faced with a threat of war imposing a blockade on importations of quinine, chiefly from the Dutch East Indies, intensive tests have been made on the use of atabrine, a synthetic anti-malaria drug.

The tests indicate, according to a report by Dr. H. C. Clark, director of the Gorgas Memorial laboratory, Panama, and Dr. William H. W. Komp, United States Public Health service engineer, Ancon, Panama, that the synthetic drug is just as effective as quinine in stopping the chills and fever of malaria and helping to rid the body of the bacteria which cause it.

SOME PREFER ATABRINE

"We consider quinine and atabrine of equal therapeutic value," they said in a report to the American Association for the Advancement of Science on results of a series of tests on natives of Panama, near the eastern boundary of the Canal Zone.

The people were split into three groups—those receiving atabrine, those given quinine, and a control group given quinine only if they asked for it. Atabrine proved just as effective as quinine in reducing the infection rate from 45 per cent to about 7 per cent in the two treated groups, they declared. "Good re-

sults were obtained from the viewpoint of increased labor efficiency and clinical cures."

Atabrine is preferred to quinine by most people who have taken both, they added, although quinine is at present a more economical drug for general use.

TESTS MADE BY ARMY

The importance of atabrine was indicated in tests made by the United States army during troop maneuvers in Texas last summer. Government authorities have been concerned about supplies of quinine and opium for the manufacturing of morphine and other sedative drugs.

In the latter instance, drug firms of the country, supplied funds for the government's importation of opium from Turkey and today 300 tons of it are in the United States treasury vaults in Washington—a supply sufficient for the needs of the United States, Canada and Latin American countries for several years to come.

From the standpoint of defense of the Western Hemisphere medical men are prepared to meet the needs of enlarged armies and navies and to provide them with necessary preventive drugs and vaccines. (Associated Press Clipping from *Flint, Mich. Journal*, January 1, 1941.)

Fundamental Principles of Treatment of Gonococcal Infections of Women

1. The majority of gonococcal infections of urethra and cervix seen in practice will recover in six months more or less without tubal infection if judiciously handled and allowed to do so.

2. Injudicious local treatments can and often do spread the infection to the tubes.

3. Abstinence from alcohol and sexual excitement of every sort is essential.

4. There is no evidence that local applications or treatments applied to the vagina or the cervix are curative. Vaginal douches, topical applications to the cervix, and cauterization of the cervix are *not* curative procedures while the gonococcal infection persists. Local applications of heat may relieve symptoms, but are never curative and are unnecessary (this includes diathermy). There is always danger that such treatments may cause tubal infection.

The vaginal approach is useful only (a) to help establish a diagnosis or observe the result of treatment by noting the amount and type of cervical discharge and the appearance of the cervix, (b) to take spreads and swabs for culture from the cervical

canal, and (c) to satisfy the patient. Cauterization is used to advantage in treating secondary infection of the cervix only after the gonococcal infection has been eradicated. In some long persistent cases of secondary endocervical infection it is necessary to "cone out" the cervix to eliminate the area of infection.

Diagnosis by spreads alone, even in expert hands, is notoriously inaccurate. Positive cultures are of enormous value, especially after the acute phase has subsided. Single negative spreads and cultures have no significance. Swabs must be taken with technical care to obtain positive cultures or spreads. Use no lubricant on speculum.

A. Cleanse cervical os and remove mucus plug with sterile cotton. Insert cotton swab well into cervical canal. Cultures must be made on plates before swabs dry or gonococci will not grow.

B. When taking spreads or cultures from the urethra be sure patient has not urinated recently. Massage urethra downward with forefinger. Insert swab well into urethral canal after cleansing external meatus.

C. Express contents of Bartholin's glands by "milking" for spreads and cultures.

At times diagnosis must depend on clinical findings alone when spreads and cultures are negative. If such are fortified by history of intercourse with an infected partner, for instance, treatment may be indicated in spite of negative laboratory findings.

TREATMENT

The only curative methods at our disposal in cases of acute or subacute gonorrheal endocervicitis are: (1) use of sulphonamides in adequate amounts, (2) artificial fever, which can only be carried out satisfactorily and safely in a few institutions with large and well-trained staffs.

SULPHONAMIDES

Inadequate dosage is not curative but masks the infection, reducing discharge and rendering "spreads" as well as cultures negative. Dosage should be adequate and patient must be seen at least every 48 hours.

EXAMPLE OF ADEQUATE THERAPY SULFATHIAZOLE

Sulfathiazole is far more effective and less toxic in adequate dosage than is sulfanilamide. Adequate dosage (J. F. Mahoney and C. J. Van Slyke) consists in giving sulfapyridine or sulfathiazole, 1 tab-

let, Gms. 0.5 (grains $7\frac{1}{2}$ per cent) every four hours at 8 A. M., 12 M., 4 P. M., and 8 P. M. (daily total amount Gms. 2.0) for twelve days and no longer. Such doses very rarely cause toxic symptoms and give excellent curative results. Sulfathiazole given in same way is preferable to sulfapyridine and is practically non-toxic and more effective. Acute gonococcal salpingitis requires bed and often hospital treatment. Administration of sulfathiazole or sulfapyridine as described above is remarkably successful. Fever, pain, and tenderness almost, or entirely, disappear in from forty-eight hours to ninety-six hours in nearly all cases.

*If patient is not improved after five days' administration of sulfathiazole or cured after twelve days, change to sulfapyridine and treat with same dosage twelve days. (Reverse procedure if sulfapyridine is first used.) Limitation of fluids is unnecessary. Toxic symptoms which indicate stopping treatment: 1. fever, 2. severe gastro-intestinal disturbance, 3. hemolytic anemia or agranulocytosis, and 4. drug rash.

In our own experience sulfathiazole is far less toxic and yields better results in the treatment of gonococcal infections than does even sulfapyridine. There is every reason to believe that given as here recommended one may expect cures in more than 80 per cent of one's cases.

Other than slight headaches, slight nausea or malaise we have had no evidences of toxicity. We have seen no renal disturbances nor crises of anemia. Patients with hemoglobin of less than 50 per cent or a proportionally low red blood cell count should not be given sulfapyridine or sulfathiazole.

When sulfathiazole is given in the doses here recommended there appears to be no need of carrying out blood concentration tests for other than investigative work. The concentration with these doses appears to be sufficient for clinical results.

The value of sulfathiazole in treating gonococcal infections is fairly comparable to its recognized worth in the treatment of the pneumonias.

CRITERIA OF CURE

1. No patient should be discharged as cured until four months of negative spreads, taken every two weeks, have been obtained. Must also be "clinically cured". Cultures if possible should be taken once a month.

*Abscesses must be evacuated surgically as formerly.

2. Do not forget that an infected husband or consort will reinfect the patient unless also treated. Every patient must have a Wassermann Test.

GONOCOCCAL VAGINITIS OF CHILDREN

Investigations of New York Study Group (A. Cohn et al) show that about 75 per cent of such cases recover spontaneously if untreated in six months or less. Estrogenic treatments give apparent good clinical results with negative spreads, BUT cultures remain positive as long as in untreated cases.

Best Treatment. Sulfapyridine (or sulfathiazole) given in daily total doses of Gr. $\frac{1}{2}$ per pound of body weight will probably cure 90 per cent of such cases if continued for seven to twelve days. Four doses should be given at four hour intervals daily. Total daily dose should not exceed Grams 2. Children tolerate this well. They should remain under observation six months after apparent cure.

It is urgent that pregnant patients with gonococcal infections should be treated and cured before delivery. Both patient and fetus tolerate remarkably well the dosage just described. Pregnancy does not add risk to the use of sulfapyridine or sulfathiazole.

The same method of treatment with the same dosage just described is recommended for male patients, and yields like results.

NOTE.—By Robert M. Lewis, M.D., New Haven, in The Connecticut State Medical Journal, Vol. IV, No. 11, November, 1940.

Copies of this reprint may be secured from American Social Hygiene Association, 1790 Broadway, New York, N. Y.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Norfolk Auxiliary.

The Auxiliary to the Norfolk County Medical Society held its regular meeting on January 20. There were four new members present.

The treasurer was instructed to send \$10.00 to the Leigh-Hodges-Wright Memorial bed and \$10.00 to the Maintenance Fund. The Layette Chairman reported that two layettes had been completed and were available when there was a call for them.

Following the business meeting, the annual Public Relations Tea was held, to which members of various women's organizations had been invited. There were thirty-six guests. Mr. H. G. Parker, Director of Public Welfare, spoke on New Governmental Problems in Norfolk in Connection with Defense Activities.

The next meeting will be at a luncheon on March 25, at which time the State President, Mrs. G. W. Holland, will be the guest of honor.

RUTH WILSON,
(MRS. F. D. WILSON).

The Auxiliary to the Northampton-Accomac Society

Met on January 14 at the home of Mrs. W. J. Sturgis of Nassawadox, with twenty members present. The newly elected president, Mrs. J. L. DeCormis, presided.

Dr. T. F. McGough, the health officer of Northampton County, gave a very interesting talk on "The Needs of Northampton and Accomac Counties from a Medical Standpoint".

Mrs. G. W. Holland, State President, gave a short history of other auxiliaries in the State and told of the benefits of the auxiliary to both the doctors and their wives.

Mrs. E. W. P. Downing gave two stories about doctors and two original poems.

The Auxiliary's Christmas gift to the hospital at Nassawadox was a check for \$45.00 for two chairs for patient's rooms, bringing the total to six chairs which have been given by the Auxiliary.

Mrs. John P. Hamilton read "The Story of Jane Todd Crawford", a most interesting and moving history of a pioneer woman's operation in the wilderness of Kentucky, taken from the book "Doctors on Horseback". This paper was published in both the Accomac and Northampton County papers.

Hygeia was placed in four high schools and one beauty parlor, through the efforts of Mrs. DeCormis.

An auction of foods for general funds was followed by a social hour, with delicious refreshments served from a beautifully appointed table.

The April meeting will be a luncheon at the home of Mrs. E. W. P. Downing, Franktown.

CATHERINE RUSH TROWER,
(MRS. HOLLAND TROWER),
Chairman, Press and Publicity.

Jane Todd Crawford.

Mrs. Crawford was born in Rockbridge County, Virginia. Very little is known about her parents but her father, Samuel Todd, was at one time sheriff of Botetourt County. According to the records, Jane Todd Crawford must have been forty-two years old when she moved away from Virginia.

Dr. McDowell was also born in Rockbridge County, but nine years after Jane Todd's birth. His family moved to Kentucky when he was a small boy. He returned to Virginia for a while when he entered the office of Dr. Alexander Humphries in Staunton as a medical student.

While all credit must be given Kentucky for beginning the plans for a memorial to Mrs. Crawford, the above demonstrates that Virginia may appropriately take an active part in bringing recognition to this heroic son and daughter of our State. It is hoped that someone will be able to undertake the project of locating Mrs. Crawford's birthplace and ascertaining more about the years spent in the land of her birth.

This year the type of memorial will be definitely decided upon by the Auxiliary to the Southern Medical Association which has taken over the project. It will be educational in nature, perhaps a fund to help sons of doctors finish their medical education if the father has passed away or has become disabled. Two thousand dollars is the goal set by the Southern for this year. When this is raised it might be enough to start work. \$1,256.16 is now held by the Southern. An additional \$54.00 is on hand in Virginia.

The plan of asking each member to contribute ten cents has been used in Virginia, and, while an Auxiliary need not limit itself to this amount, I feel that a dime given by each member with the proper recognition and appreciation of Mrs. Crawford's bravery and her invaluable aid to Dr. McDowell in opening up a new field in surgery will be the highest type of tribute. I hope that each Auxiliary will allot time on one of its programs for the story of Mrs. Crawford to be retold and that each of our

345 members will take part in making the fund grow.

GLADYS LEE HAMILTON,
(MRS. JOHN R. HAMILTON).

Headquarters for A. M. A. Meeting.

Hotel Carter will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association, which will be in Cleveland, June 2-6. Requests for reservations should be sent immediately to Dr. Edward F. Kieger, Chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Electrocardiography in Practice. By ASHTON GRAY-BIEL, M.D., Instructor in Medicine, Courses for Graduates, Harvard Medical School; Research Associate, Fatigue Laboratory, Harvard University; and Assistant in Medicine, Massachusetts General Hospital. And PAUL D. WHITE, M.D., Lecturer in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, in charge of the Cardiac Clinics and Laboratory. W. B. Saunders Company. Philadelphia. 1941. 319 pages, with 272 illustrations. Cloth. Price, \$6.00.

Plague On Us. By GEDDES SMITH. New York. The Commonwealth Fund. 1941. Octavo of 365 pages. Cloth. Price, \$3.00.

Clinical Pellagra. By SEALE HARRIS, M.D., Professor Emeritus of Medicine, University of Alabama. Assisted by SEALE HARRIS, JR., M.D., Formerly Assistant Professor of Medicine, Vanderbilt University. With Foreword by E. V. McCollum, Ph.D., Sc.D., LL.D. St. Louis. The C. V. Mosby Company. 1941. Octavo of 494 pages. Cloth. Price, \$7.00.

Textbook for Male Practical Nurses. By GAYLE COLTMAN, R.N. New York. The Macmillan Company. 1941. 12mo of 215 pages. Cloth. Price, \$2.00.

The American College of Physicians. Its First Quarter Century. Historian—William Gerry Morgan, M.D., LL.D., Sc.D., M.A.C.P. Philadelphia. 1940. 271 pages. Cloth.

Manual of Clinical Chemistry. By MIRIAM REINER, M.Sc., Assistant Chemist to The Mount Sinai Hospital, New York. Introduction by Harry Sabotka, Ph.D., Chemist to The Mount Sinai Hospital. 1941. Interscience Publishers, Incorporated. New York. 12mo. of xv-296 pages. With 18 illustrations. Cloth. Price, \$3.00.

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MARCH, 1941

No. 3

Editorial

The Value of Mature Clinicians to the Teaching Staff of a Medical College.

The remark is often made that the present age is the young man's age, both in business and in the professions. With respect to the professions, this seems to be more true in scientific and technical fields than in philosophical and cultural pursuits, the reason being that in the former, the rapid growth of knowledge and the numerous changes constantly being made in technology make it difficult for older men to keep abreast of the times.

The rapid development of scientific medicine during the last thirty years has created a great demand in our medical colleges for young full-time teachers. They have been recruited from the ranks of academically-minded young men who prefer the research laboratory and the lecture room to the wear and tear of practice. Professional teaching in medical schools has become an attractive career to young graduates in medicine who discover that they are more interested in the academic and scientific side of medicine than in its practical application. To be sure, instructors and professors of medicine are practitioners in the sense that they make daily rounds in the wards and minister to the ailments of ward patients, but their interest is largely centered in the pathological, physiological and diagnostic aspects of disease and too often the therapeutic side is neglected. However,

patients, even ward patients, come to the hospital to be cured, and one reason for the great success of the Mayo Clinic and other such institutions is that their primary interest is in the *cure* of sick people. The practitioner, to be successful, must have a genuine zeal for therapeutics. He must be full of therapeutic resources so that when one thing fails, another can be tried. After many years of experience and of following the same patient from early youth to old age, he learns much that is not found in textbooks, as well as a valuable perspective that cannot be acquired from the rapid turn-over of acutely ill patients in a ward. For this reason the mature clinician, the wise practitioner, who has practiced medicine for twenty to thirty years, has something of great importance to offer to the modern medical student. By all means let us have the benefit of the young full-time teacher! He is usually specializing in some particular phase of medicine or surgery and his training in the fundamentals is superior to that of the older men; for these reasons he is indispensable to the modern medical faculty. But let us not forget that the wise and experienced practitioner will always have an important message for the medical student, most of whom will inevitably go into the general practice of medicine.

R. L. C.*

*Russell L. Cecil, M. D., Professor of Clinical Medicine, Cornell University Medical College, New York City.

Selective Service and the Medical Student.

The question of what to do with medical students who fall within the draft age has not yet been settled. In reaching a decision one must bear certain facts in mind.

The education of a medical student requires eight years. Two years must be spent in college in the study of the basic sciences, chemistry, physics and biology. This period is usually described as pre-medical. Four years must then be spent in medical college learning the principles of medical practice. Two final years are necessary in hospital internship before the student is considered well enough equipped to engage in independent medical practice. The preservation of the continuity of such a course of education is obviously of the greatest importance. The student cannot break the natural sequence of the medical curriculum without serious penalties to his professional career.

His personal loss, however, is not the main point in a consideration of the Selective Service Act and the medical student. Medical students and poorly equipped doctors are of no value in the medical department of the military service. It is always necessary to have additional physicians in the medical service at a time of emergency and we defeat this end if we take into the service medical students and graduates before they have been sufficiently trained. To those who argue that medical students should not be regarded as a class apart and that since this is a democratic country, they should come under the same rules as apply to other youths of like age, we must reply that we are not only ruining the medical careers of many promising young men, but are squandering the money the State has spent upon their education when we draft them for positions in which their medical knowledge can be of no service to the State.

Something else can be said in support of the contention that medical students should be allowed to complete their professional education before being called to service. In nearly every medical school there is a two-year course in military medicine from which students graduate directly into the medical reserve corps of the army. Such medical students can therefore be regarded as already partially trained for military service when they have completed their formal medical education.

But it should be again emphasized that a doctor is not prepared to practice medicine until after his

internship and, by the same token, he does not belong in the army.

It seems to us that all students of medicine, whether in their period of pre-medical work or in their four years in medical college, or in their two years as internes, should automatically be placed in the deferred class. Physicians who wish to go into specialization and to take up special internships at the completion of their period of general internship should not be allowed to offer this intention as a substitute for active military service.

Jail Reform.

We came very close to realizing the dreams of those interested in jail reform in Virginia during a meeting of the last legislature. The reforms proposed then will probably be accomplished by the passage of a bill which will be presented to the next General Assembly. In the place of ninety-nine county and sixteen city jails operated without unity of plan, dirty and inefficient, we hope for a consolidation of these essential institutions into regional jails, clean, well built, and efficiently operated.

Physicians are naturally interested in any proposed improvement in the medical care of jail inmates. There are now more than 100 jail doctors in Virginia, one for each county, city and camp. They are appointees of the local courts. The camp physicians are on contract. The others serve on a fee basis, seventy-five cents for the first case, fifty cents for others. Only minor illnesses can now be treated in jails in Virginia. Serious illnesses and surgical cases have to be moved to hospitals. There is no standardization of procedure which would insure efficient medical service. There are few infirmaries in the jails and no nursing care to speak of. A recent description of the "bull pen" in Richmond gives a horrid picture of existing jail hygiene and sanitation little different from that suggested by the old Rockefeller-restored jail at Williamsburg.

There is wide room for medical reform in the penal institutions in Virginia, and it is to be hoped that with a few regional jails and the wider use of prison camps, well organized and equipped infirmaries will be provided, a unified medical organization set up, a centralized bureau of inspection established and good doctors on a salary basis employed. If these are the changes Virginia doctors desire, they had best not take their accomplishment too much for granted.

Keeping Up With Influenza.

As a sequel of infection with the virus of influenza, in both animals and human beings, the appearance in the blood of specific antibodies has been satisfactorily demonstrated. Following a single dose of Horsfall's influenza-distemper virus vaccine, antibodies appear in about two weeks. This suggests that this vaccine has prophylactic value, but it does not prove it, for it is well known that antibodies may appear independently of such protection. The results of properly controlled mass vaccination in the presence of an epidemic of influenza will have to be awaited before the proper evaluation of prophylactic vaccination can be made.

The other important fact to be determined about the virus of influenza relates to classification. Up to the present time two immunologically distinct groups have been recognized. Virus A has been shown by Smith, Andrews and Laidlaw to produce specific antibodies. It can be identified with certainty in the laboratory. Sub-groups of it likewise may be identified. There are, however, many cases of clinical influenza which do not fall into this immunologically specific group. For the present they belong to a class comparable to the old Group IV pneumococcus, a sort of immunologic waste basket. Further investigation will undoubtedly identify the causative factor in this large group of cases of unknown etiology.

A Paean For Paracelsus.

A few days ago the New York Academy of Medicine assembled in solemn acknowledgment of the Four Hundredth Anniversary of the death in Salzburg of one of the most enigmatic characters of medical history.

This man called himself Phillipus Theophrastus Aureolus Paracelsus Bombast von Hoenheim. Boastful, vulgar, disputatious, an ardent disciple of alchemy, a chatterer of cabalistic nonsense, he wandered through Europe from one professorship to another, and death came to him in a tavern brawl. It would be astonishing indeed for the medical world to pause four centuries after his death to pay tribute to his sojourn on earth if these facts were all his claim to fame.

It has been said that a man's faults are only the reverse side of his virtues. It is to this other side of Paracelsus that we must turn for an explanation of the world's homage to him.

In a day when the hand of the past was heavy

beyond belief, Paracelsus had the daring to put aside the use of the traditional Latin tongue to lecture in the vernacular of the German world in which he moved, and in a day when filth was an accepted concomitant of human living, he was an advocate of asepsis. He wrote a creditable work on surgery, *Chirurgia Magna*. His *Von der Bergsucht*, a short book on miners' diseases, places him among the earliest writers on occupational diseases. His *De Gradibus* is a treatise on therapy which strikes the first modern note in medical treatment. He was the first to use mercury in the treatment of syphilis, and also introduced into the Pharmacopoeia lead, sulphur, iron, arsenic, copper and laudanum. He was the first to identify goitre with cretinism. The old quack was the first powerful assailant upon the ancient unchanging tradition of medicine. He gave the death blow to Galenical therapy and set men thinking in a way that must earn for him man's eternal gratitude.

Jittery Induction Boards.

A great noise has been made over the acceptance of tubercular persons for military service in the last war. There is now a determination everywhere that federally operated tuberculosis sanatoria shall not be overrun by pulmonary cases admitted under the present emergency.

There was also after the last war an enormous post bellum residuum of nervous and mental casualties which might have been prevented by wiser and better instructed examining boards. It is generally understood that the experts in Washington who are heading up the present organization charged with the responsibility of the nervous and mental examinations of draftees appearing before induction boards, have gone the limit in setting up standards of acceptance and have turned on the pressure in their instructions to representatives of their specialty sitting on induction boards.

As a result, of the 228 men reporting in Roanoke to the induction board in the fourth selective service call in Virginia, seventy-three were rejected. Of these seventy-three men, thirty-one, or 40 per cent were rejected on the ground of their being mentally defective. This is too high a percentage. It is obvious that 13 per cent of young men of military age should not be excused from military service because of "mental defectiveness". Clanking spurs and thundering voices must have given us the jitters.

Artificial Insemination.

Up until June, 1940, according to a recent questionnaire sponsored by the National Research Foundation for Eugenic Alleviation of Sterility there have been 9,238 children born in the United States as a result of artificial insemination. Five thousand seven hundred and twenty-eight of these children were produced by artificial insemination in which the husband of the mother was employed. In 3,510 cases, donors were used. More than 5,000 doctors participated in these reported results.

Apparently it was not always easy to bring about pregnancy by artificial insemination, but in some instances many unsuccessful attempts were followed by a satisfactory result. One hundred and twenty-four physicians, for example, reported final success in cases after more than twenty-one failures at insemination. Among those artificially inseminated 2.3 per cent miscarried, there were twenty-two extra uterine pregnancies and forty-four flare-ups of previously existing infection.

The medical profession has gone a long way, eugenically speaking, since the days when they fought over contraceptive advice as a eugenic and economic measure. Artificial insemination of human beings

using material from donors is something few of us would have dreamed of a decade ago. Few of us would dream today that it is being practiced on such a wide scale as this survey has revealed.

An Organization of Southern Scientists.

There is a movement on foot to organize at the meeting of the Alabama Academy of Science, March 20-22, 1941, in Mobile, a southern Scientific Society which might later function as the southern division of the A. A. A. S. It has been pointed out that such an organization would offer an opportunity for joint symposiums on problems common to the South, with possibly a reduction of the number of local meetings. It would give unity, purpose, and stimulation to academic and industrial research in the South. It would also create opportunities for scientists in certain fields where there are not now enough workers for independent organizations, and it would serve as a means of developing a conscious interest in research on the part of the general public in the South. In fact, such an organization would prove a clearing house for scientists in this area. An organization of this character should interest physicians in view of the fact that it is proposed to incorporate in it sections on biology and medicine.

Department of Clinical and Medical Education of the Medical Society of Virginia

Postgraduate Clinics.

The annual spring postgraduate clinics of the Medical College of Virginia will be held in Richmond in conjunction with the Stuart McGuire Lectures which will be delivered by Dr. Alfred Blalock of Vanderbilt University on April 24 and 25.

The twenty-seventh semi-annual postgraduate clinic of the University of Virginia Department of Medicine will be held on Friday, April 11. It will deal with "Present Concepts of Therapy" with special reference to digitalis, sulfonamide, deficiency states, sex-hormones, and fluid balance. An announcement of the full program will be mailed to all doctors shortly.

Short Courses.

Plans are now being made for a short course of one week's duration to be held at the University of Virginia Medical School during the week of June

16-21. The enrollment limit of twenty established last year will be extended to forty for the coming course due to requests received from doctors in the State. The general subject will be "Recent Advances in Internal Medicine". Specific topics will be selected through interviews with those who plan to enroll. A full announcement of the course will be distributed in April.

The Danville-Pittsylvania Academy of Medicine is now offering a course of eight discussions dealing with Internal Medicine, Psychiatry, Obstetrics and Gynecology. The first two discussions of the series were conducted by Dr. C. J. Andrews of Norfolk and Dr. Floyd E. Boys of the University of Virginia Department of Medicine. The March program will be conducted by Dr. D. C. Wilson of the University of Virginia Department of Medicine.

Consideration is also being given to courses for the

spring or early summer by the Elizabeth City County Medical Society, Loudoun County Medical Society, and the Lynchburg Academy of Medicine. These societies have been submitted suggestive programs dealing with surgery, internal medicine, orthopedics, obstetrics and gynecology. Possible speakers are also suggested for the topics included.

Component societies considering courses in the near future may receive this suggestive list of topics and other assistance by addressing the Executive Secretary.

GEORGE B. ZEHMER, *Executive Secretary.*

University, Virginia.

Proceedings of Societies

Virginia State Board of Medical Examiners.

The following doctors were granted certificates to practice at the December examination of the Board:

Dr. Charles Palmer Alexander, Richmond.
 Dr. Charles Lee Beavers, Franklin.
 Dr. Leslie M. Bell, Boston, Mass.
 Dr. Samuel Michael Bloom, Clifton Forge.
 Dr. Arville Wayne Bradford, Derby.
 Dr. Chester Dale Bradley, Hampton.
 Dr. John Carter Branham, Arlington.
 Dr. Richard Lewis Brown, Jacksonville, Fla.
 Dr. William Thomas Cassano, Front Royal.
 Dr. Mortimer Taliaferro Clement, Washington, D. C.
 Dr. Claude Everett Cooper, Washington, D. C.
 Dr. Jerome A. Cope, Arlington.
 Dr. Thomas Henry Dickerson, Martinsville.
 Dr. Carolyn Heston Lucas Dickson, Washington, D. C.
 Dr. Leon Ashby Dickson, Washington, D. C.
 Dr. Martin L. Dreyfuss, Clifton Forge.
 Dr. Jerome Feldman, Richmond.
 Dr. Ralph Frazier, Galax.
 Dr. June Uriah Gunter, Roanoke.
 Dr. Grover Cleveland Godwin, Roanoke.
 Dr. John Clifton Gordon, Bluefield, W. Va.
 Dr. Herbert Bryan Hutt, Alexandria.
 Dr. Frederick Joseph Jardon, Philadelphia, Pa.
 Dr. Benjamin Milton Kagan, Richmond.
 Dr. Thornton Kell, Bluefield, W. Va.
 Dr. Tom Hedrick Kuhnert, Bristol, Tenn.
 Dr. Nolton Senard Lieberman, Norfolk.
 Dr. Sterling Morrison Lloyd, Washington, D. C.
 Dr. Robert Bruce Mallett, Orange.
 Dr. John Walter Martin, Washington, D. C.
 Dr. Dillon Rymer McClary, St. Charles.
 Dr. Milton Millman, Stonega.
 Dr. Vito John Murgolo, Cradock.
 Dr. Raymond Ben Newman, Phoebus.
 Dr. Joel N. Novock, Washington, D. C.
 Dr. Carlton Lee Ould, Roanoke.
 Dr. Joseph E. Paganelli, Virginia Beach.
 Dr. Williams Edwin Pembleton, Richmond.
 Dr. Willard L. Quennell, Norfolk.
 Dr. Robert Stewart Randall, Washington, D. C.

Dr. Samuel Gilmore Saunders, Staunton.
 Dr. Joseph Morton Schoenfeld, Norfolk.
 Dr. Ernest Luke Shore, Atlantic City, N. J.
 Dr. Elbert Brown Singleton, Richmond.
 Dr. Gertrude Slater, New York, N. Y.
 Dr. John Dennis Snider, Ashburn.
 Dr. Byron William Steele, Mullens, W. Va.
 Dr. Vernon Andrew Stehman, Arlington.
 Dr. Henry G. Steinmetz, Arlington.
 Dr. E. Christopher Stuart, Jr., Durham, N. C.
 Dr. George James Stuart, Arlington.
 Dr. William Wickham Taylor, Norfolk.
 Dr. John Samuel Thiemeyer, Portsmouth.
 Dr. Thomas Brent Wayman, Cincinnati, Ohio.
 Dr. Albert Franklin Dilworth (Osteopathy), Front Royal.

The Augusta County Medical Association

Held its regular quarterly meeting in Staunton on February 5, with Dr. S. H. Garst of Staunton presiding. The program consisted of the following papers: "Metastases in Malignant Diseases" by Dr. Marshall J. Payne, Staunton, in collaboration with Dr. Philip Shultz of the University of Virginia; "Recent Studies in Hypertension" by Dr. John Guss, Churchville; and "Anemia" by Dr. Byrd Leavell of the University of Virginia.

Dr. V. A. Turner of the Augusta County Health Department presented an outline of a plan for Maternal and Child Welfare Clinics to be held in Staunton at stated intervals for pregnant women and children of Augusta County.

The secretary, Dr. Joseph E. Cox of Waynesboro, is among those who have been called to active duty in the army for the year beginning March 1.

Lynchburg Academy of Medicine.

The Academy held its first meeting of the year at a dinner at the Virginian Hotel on January 6. There was a large attendance of members and guests. An

interesting program was presented by Dr. H. Huddnall Ware, Jr., Richmond, who spoke on "Ectopic Pregnancy, Incidence and Analysis", and Dr. R. A. Ross, Duke University, Durham, N. C., who gave a paper on "Endocrine Therapy in Sex Endocrinology". Officers for the year were also installed at this meeting.

The February meeting of the Academy was held on the 3rd, with the president, Dr. Powell G. Dillard, presiding.

Dr. Oscar Swineford, Assistant Professor of Medicine, University of Virginia, presented a very practical paper on "Symptomatic Treatment of Allergic Diseases", and Dr. E. M. Landis, Professor of Medicine at the University, gave an illustrated paper on "Recent Work on Human Hypertension". Both papers were enjoyed by a large turn-out with lengthy general and group discussions following.

C. E. KEEFER,
Secretary.

Richmond Academy of Medicine.

On the evening of February 11, the seventh annual dinner and meeting of the Section on the History of Medicine of the Academy took place at the home of the Academy. The occasion of this meeting is known as the "Walter Reed Lectureship".

Dr. J. Morrison Hutcheson, Chairman of the Section, presided and presented to the members and their wives the distinguished guest speakers of the evening, Dr. Reginald Fitz of Boston, Massachusetts, and Dr. Andrew D. Hart, Jr., of Charlottesville.

Dr. James K. Hall, Chairman of the Nominating Committee, brought in the following slate of officers for the ensuing year: Dr. M. Pierce Rucker, Chairman; Dr. W. Lowndes Peple, Vice-Chairman, and Dr. A. Stephens Graham, Secretary-Treasurer. These were elected to their respective offices.

At 8:30 P. M. the guests adjourned to the auditorium where, with the entire Academy membership, they listened to the addresses of the guest speakers. Dr. Hart spoke on "Ignorance and Medicine" and Dr. Fitz on "The Story of Appendicitis".

Tazewell County Medical Society.

At the regular bi-monthly meeting of this Society in Tazewell in January, Dr. Hugh B. Brown of Draper was the guest speaker, his subject being "The Relationship between the Health Departments and the Local Physicians". In the business meeting following, Dr. Thornton Kell of Bluefield and Dr. John S. Pearson of Jewell Ridge were elected to membership.

Dr. J. P. Williams of Richlands and Dr. Mary Elizabeth Johnston of Tazewell are president and secretary of this Society, respectively.

Albemarle County Medical Society.

At the regular monthly meeting on February 6, Dr. Eugene Landis spoke on "Practical Aspects of Kidney Function Tests".

Dr. Wm. H. Wood, Jr., and Dr. E. W. Kirby, Jr., are president and secretary, respectively, of this Society.

Neuropsychiatric Society of Virginia.

At the winter meeting of the Society in Richmond, the following papers were presented: Yeast Infection of the Nervous System by Dr. J. Asa Shield; Mental Deterioration in the Psychoses by Dr. Ernest H. Alderman; and Suicidal Attempts as Seen in a General Hospital by Dr. Patrick H. Drewry, Jr., all of these doctors of Richmond; and The Problem of the Psychotic Personality in the Feeble-minded Institution by Dr. George B. Arnold of Colony. A business session followed at which Dr. W. Gayle Crutchfield was elected president and Dr. Howard R. Masters vice-president. Dr. Edward H. Williams was re-elected secretary-treasurer. All officers are of Richmond.

The Richmond Pediatric Society,

At its annual meeting in January, elected the following officers for the ensuing year: President, Dr. Louise Fry Galvin; vice-president, Dr. T. Stanley Meade; and secretary-treasurer, Dr. Herman W. Farber.

News Notes

1941 Medical Society of Virginia Meeting.

Dates have been definitely set for the 1941 meeting of the Medical Society of Virginia as October 6, 7 and 8. The place is Virginia Beach, with headquarters at Cavalier Hotel. Several hotels are in easy walking distance, so there will be ample room to accommodate those who attend. Only business sessions will be held on the first day, Monday. The Council will have a luncheon meeting and the House of Delegates will meet that afternoon. Scientific sessions will commence on Tuesday morning, at 9:30 a. m., with two programs a day—morning and afternoon—and one guest speaker at each. A banquet will close the convention on Wednesday evening.

The following have been appointed as a joint committee on arrangements from the Norfolk and Princess Anne County Societies: From Norfolk—Dr. George A. Duncan, chairman, and Drs. Mallory S. Andrews, J. V. Bickford, William P. Sellers, and C. M. McCoy; From Princess Anne—Dr. Ira L. Hancock, chairman, and Drs. H. F. Dormire and R. A. Stata. Dr. Duncan is general chairman for the two groups.

There is every promise of a splendid meeting and we hope for a large gathering of members.

The Southeastern Surgical Congress

Will hold its twelfth annual postgraduate assembly at the John Marshall Hotel, Richmond, on March 10, 11 and 12, under the presidency of Dr. Irvin Abell, Louisville, Ky. Dr. Julian L. Rawls, Norfolk, is president-elect. Papers will be presented and discussions will be led by distinguished clinicians whose ability as teachers will assure a worthwhile program. Morning sessions will begin promptly at 9 o'clock and afternoon sessions will begin promptly at 2:30 o'clock. During the noon hours, round table discussions will be conducted, at which time doctors are invited to ask questions on any paper presented during the morning or preceding afternoon sessions.

A cordial invitation is extended to all members of the profession who may find interest in the proceedings of this assembly.

A full program is published in the "Miscellaneous" Department on page 170 of this issue.

Promotions in State Health Department.

Dr. A. L. Carson who, since retirement of Dr.

B. B. Bagby on July 1, has been acting as head of the bureau of Maternal and Child Health of the State Health Department, has been appointed by Dr. I. C. Riffin as full director of that bureau.

Dr. J. B. Porterfield, recently State epidemiologist in the bureau of Communicable Diseases, has been appointed director of the bureau of Industrial Hygiene.

Married.

Dr. George Craddock Barksdale and Miss Mary Spencer Jack, both of Lynchburg, February 1.

Dr. Wm. Fitzgerald Cavedo and Miss Edith Earline Mann, both of Richmond, February 12.

Dr. Charles Lemuel Prince, III, of the University of Virginia, and Miss Katherine Wachob Eaton of Pittsburgh, Pa., February 15.

Lt. Eugene Bowie Shepherd, M.C., class of '35, Medical College of Virginia, and Miss Mary Walker Lewis of Richmond, February 24. Lt. Shepherd is a son of Dr. and Mrs. William A. Shepherd of Richmond.

The Southwestern Virginia Medical Society

Will hold its next semi-annual meeting in Pulaski on April 16, at which time an excellent program will be presented. Dr. T. K. McKee of Saltville and Dr. James P. King of Radford are president and secretary, respectively.

New Color Film on Vitamin B Complex.

The apparently high incidence of sub-clinical deficiency states associated with lack of the vitamin B complex and the difficulty of recognizing and diagnosing such conditions make the announcement of a new motion picture on the vitamin B complex one of special interest. The title of the new film is "The Vitamin B Complex"; it is entirely in 16 mm. Kodachrome. A *sound* as well as a *silent* version is available to medical societies and medical schools.

The film is based largely on clinical material from the Nutrition Clinic, Hillman Hospital, Birmingham, Ala. The cases selected for the most part were not so much those exhibiting the classical syndromes, but rather were of the mild type frequently involving mixed deficiency states and less endemic in character.

A brief discussion of the physiological properties of the individual and better known members of the

vitamin B complex introduces the film and serves as a background for the very generous exposition of the various clinical cases that comprise the balance of the picture. Not the least interesting of the features of the film is the marked fidelity of the colors to the dermatological lesions which are reproduced.

Special emphasis is given in the film to the promptness and specificity of the therapeutic response when diagnosis has been correct. The dietary management of B complex deficiency states is outlined and harmonized with the application of the separate crystalline components of the complex.

The film, "The Vitamin B Complex", was produced under the supervision of the scientific and medical staffs of E. R. Squibb & Sons, and was reviewed before release by authorities of international repute in the field of medicine and nutrition. There is no advertising in the film which is offered solely as a conservative review of the present status of the subject. Inquiries with reference to the loan of the film may be addressed to E. R. Squibb & Sons, Professional Service Department, 745 Fifth Avenue, New York, N. Y.

Dr. Thomas E. Painter,

Recently of Williamsburg, has located in Radford, where he is associated in general practice with Dr. T. L. Gemmill.

Dr. Walter J. Rein,

Recent associate in ophthalmology of the late Dr. Emory Hill, announces the continuation of his practice at the same address in Professional Building, Richmond.

Appointed on Regional Defense Councils.

Governor Price has appointed Dr. Walter B. Martin of Norfolk as a member of the Hampton Roads regional defense council, and Dr. D. S. Divers of Pulaski to the Radford area defense council. These appointments were designed to give the councils men thoroughly familiar with the health and hospital problems in the respective regions.

Sigma Zeta Society Lecture.

Dr. E. M. Landis, professor of medicine at the University of Virginia, will deliver the annual Sigma Zeta lecture on Wednesday, March 12, at 8:30 P. M., in the Baruch Auditorium of the Egyptian Building, Medical College of Virginia. His subject will be "Capillary Physiology and Fluid Balance". The medical profession is cordially invited to attend.

The New York Polyclinic Medical School and Hospital

Announces a special lecture by Dr. Russell L. Cecil, Professor of Internal Medicine, on Wednesday, March 26, at 2:30 P. M., his subject being "The Present Status of the Theory of Focal Infection". Members of the medical profession are invited.

Dr. Richard C. Potter

Has been called into active duty at the Army Medical Center, Walter Reed General Hospital, in Washington. For the past year and a half he has been engaged in private practice at Marion.

News from University of Virginia, Department of Medicine.

The Phi Lambda Kappa Medical Fraternity annual undergraduate award, a gold medal, for the scientific thesis judged to be best was won this year by Leonard J. Yamshon, a member of the Third Year Class in the Department of Medicine of the University of Virginia. The thesis was based on the research done on a presumptive human embryo under the direction of Dr. James E. Kindred of the School of Anatomy.

On January 16, Dr. C. C. Speidel addressed the Harvey Society of New York City on the subject, Adjustments of Nerve Endings.

Dr. I. A. Bigger, Professor of Surgery at the Medical College of Virginia, gave the second Alpha Omega Alpha Lecture on February 7. He spoke on Ligation of Large Arteries.

On February 7, Dr. T. J. Williams spoke before the South Atlantic Association of Obstetricians and Gynecologists, meeting in Jacksonville, Florida. His subject was Sterilization in the Puerperium.

On February 11, Drs. E. P. Lehman and Floyd Boys spoke before the Danville Academy of Medicine on the subject, Heparin and Peritoneal Adhesions.

At the meeting of the Historical Section of the Richmond Academy of Medicine on February 11, Dr. Andrew D. Hart, Jr. gave one of the Walter Reed Lectures. He discussed Ignorance and Medicine.

On February 12, Dr. Staige D. Blackford presented a paper on Swallowed Air before the Stuart Circle Hospital Clinical Club in Richmond.

Virginia Physicians Honored by Army.

Two Virginians who served with distinction as army medical officers have been honored in the naming of two of the new army general hospitals.

One of these is the Lawson General Hospital in Atlanta, named for Brevet Brigadier General Thomas Lawson, who was born in 1793, and began his career as a surgeon's mate in the Navy in 1809. He was surgeon general of the Army from 1836 to 1861, in which year he died. His title was received in 1845 for service in the Mexican War.

The other is Stark General Hospital at Charleston, S. C., named after Colonel Alexander Newton Stark, who was born in 1869 and became a colonel in the medical corps in 1917. He was awarded the Distinguished Service Medal for work as chief surgeon, First Army, A.E.F. He died in 1926.

Children's Memorial Clinic.

At the annual meeting of the Children's Memorial Clinic, Richmond, Dr. Charles L. Outland was elected president to succeed Dr. Ramon D. Garcin. Dr. Henry W. Decker was made vice-president, and Dr. Harvie DeJ. Coghill, director of the Clinic, secretary. Dr. Manfred Call, III, was re-elected as a member of the Board for a term of three years.

The Base Hospital No. 45 Veterans Association,

Generally known as the McGuire Unit, held its twenty-first annual reunion in Richmond on February 22, at which time a bronze memorial tablet commemorating the services of the Unit in France was unveiled, it being located in McGuire Hall of the Medical College of Virginia. This tablet carries a reproduction of the hospital at Toul, where the Unit served, as well as names and rank of members of the organization. The speaker at the banquet that evening was Constantine Brown, foreign editor of the *Washington Evening Star*, his subject being "Behind the Scenes in the Second World War.

The Registry of Medical Technologists

Of the American Society of Clinical Pathologists has been moved from Denver, Colorado, to Muncie, Indiana, according to recent announcement. Since its organization in 1928 the Registry has been located in Denver, where its work has been carried on under the administration of its chairman, Dr. Philip Hillkowitz, and Mrs. Anna R. Scott, the registrar. The increasing burden of the office, together with a recent

serious illness, prompted the resignation of Dr. Hillkowitz. His successor is Dr. Lall G. Montgomery, the pathologist of the Ball Memorial Hospital, of Muncie. The Registry suffered a further loss in the retirement of Mrs. Scott, who has been succeeded by Miss Carlita R. Swenson, who comes from Philadelphia, where she has been associated with the United States Pharmacopoeia.

Dr. Joseph T. N. McCastor,

Class of '27, Medical College of Virginia, who has been practicing in New York City, has been appointed a Major in the Medical Corps of the 102nd Engineers, National Guard, and is now stationed at Fort McClellan, Alabama.

Coroners in Hanover County.

The following have just been re-appointed coroners in Hanover County: Dr. A. B. Gravatt for Henry District; Dr. T. E. Stanley in Beaver Dam District; and Dr. E. D. Vaughan for Ashland District.

American Academy of Pediatrics.

Region II (Southern Division) of the American Academy of Pediatrics will hold its annual meeting at the John Marshall Hotel, Richmond, on April 24 and 25. All members of the Medical Society of Virginia who are interested in pediatrics are invited to attend.

The Radford Community Hospital

Was opened in Radford, in February, with a capacity of about twenty-five to thirty beds. The building was originally erected as a hospital but was later used as an inn, and has just been renovated and had new and modern equipment installed. The board of directors is composed of Drs. J. J. Giesen, T. L. Gemmill, H. L. Dean, H. D. Fitzpatrick, E. G. Hall, and J. L. Early of Radford; and Drs. A. M. Showalter, R. H. Grubbs, R. M. DeHart, and E. P. Ambrose of Christiansburg. Dr. Giesen is president of the board.

The South Atlantic Association of Obstetricians and Gynecologists

Met in Jacksonville, Fla., February 7 and 8, under the presidency of Dr. M. Pierce Rucker of Richmond, at which time an excellent program was presented. Guest speakers were: Dr. Nicholson Jos. Eastman, professor of obstetrics at Johns Hopkins University, Baltimore; Dr. John Rock, research fellow in obstetrics and assistant in gynecology at Harvard

Medical School, Boston; and Dr. William C. Young, associate professor primate biology at Yale University, New Haven.

This Association has a limited membership of one hundred and fifty from the southeastern seaboard states and has just completed its third year. Virginia doctors registered at this meeting were: Dr. C. J. Andrews, Norfolk; Drs. John O. Boyd and A. M. Groseclose, Roanoke; Drs. S. E. Oglesby and F. O. Plunkett, Lynchburg; Dr. T. J. Williams, Charlottesville; and Drs. M. P. Rucker, L. L. Shamburger, H. C. Spalding, W. D. Suggs, H. H. Ware, and W. C. Winn, Richmond.

Dr. Wm. W. Butzner,

Fredericksburg, has been named on the City Council of that place as a member of the City Health Board to fill the vacancy caused by the resignation of Dr. Earle R. Ware.

Dr. Thomas B. Payne, city health officer, is also a member of the Board.

Petersburg Doctors Honored.

At the annual banquet meeting of the Petersburg Medical Faculty, Dr. L. S. Early was honored by being presented with a loving cup, because he holds the distinction of having practiced medicine in Petersburg longer than any other man living. Dr. J. Bolling Jones made the presentation, and Dr. Early, in expressing appreciation, gave an interesting review of the progress of medicine as observed by him during his years of practice.

Dr. J. Bolling Jones was also presented a loving cup, at the regular meeting of the Fourth District and Southside Virginia Medical Society on December 27. Dr. Lowndes Peple, Richmond, in making the presentation, expressed the love and esteem with which Dr. Jones is held by his colleagues and the unique place he has made for himself in his contact with patients and doctors during his more than forty years of practice.

Dr. John M. Love,

Member of the Medical Society of Virginia recently stationed at Ft. Bayard, New Mexico, is now with the U. S. Veterans' Administration Facility at Alexandria, La.

Dr. H. L. Hamilton,

Formerly of Goshen, is now with the Hercules Powder Company in Radford, where he is in charge of Hospital Unit Number 3.

Van Meter Prize Award.

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association in Boston, Mass., May 26th-28th. The competing essays may cover either clinical or research investigations; should not exceed three thousand words; and a typewritten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pa., not later than April 1st.

Bank Directors.

Dr. W. W. Wilkinson, La Crosse, has been re-elected president of the board of directors of the Bank of La Crosse.

Dr. D. C. Boatwright has been elected a director of the Bank of Marion, and Dr. J. D. Buchanan of the Marion National Bank.

Dr. J. H. Mapp, Buena Vista, has been re-elected president and a director of the Peoples Bank.

Dr. Porter P. Vinson,

Richmond, announces removal of his offices from Medical Arts Building, to the new Medical College of Virginia Hospital Building.

Officers in Richmond Tuberculosis Association.

Drs. T. Dewey Davis and Kinloch Nelson were re-elected as two of the vice-presidents, and Dr. R. C. Bryan as an honorary vice-president, of this Association, at its annual meeting in February. Doctors re-elected as directors include these and Drs. S. A. Anderson, Emily Gardner, and D. D. Talley.

Dr. James Q. Gant,

Class of '35, Medical College of Virginia, is now with the U. S. Public Health Service at the U. S. Penitentiary, Atlanta, Ga.

The American Public Health Association

Announces the dates of the 70th Annual Meeting as October 14-17 in Atlantic City, New Jersey, with headquarters at the Hotel Traymore.

Dr. Charles D. Smith,

Formerly of Richmond, is now located in Roanoke, with offices at 603 Medical Arts Building. He is associated with Dr. Charles H. Peterson and Dr. Allen Barker, with practice limited to radiology.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Actuarial Society of America—Blood pressure study.
 Boas & Goldschmidt—The heart rate.
 Diehl, H. S.—Textbook of healthful living.
 Duffus & Holt—L. Emmett Holt—pioneer of a children's century.
 Finney, J. M. T.—A surgeon's life.
 Gilbert, R.—The public health nurse and her patient.
 Graybiel & White—Electrocardiography.
 Grollman, A.—The cardiac output of man in health and disease.
 Gutman, J.—Modern drug encyclopedia.
 Harris & Harris—Clinical pellagra.
 Hewitt, R.—Bird malaria.
 Hume, E. E.—Medical work of the Knights Hospitallers of St. John of Jerusalem.
 Hunter, A.—Creatine and creatinine.
 Joslin, E. P.—Treatment of diabetes mellitus.
 Lorenz, A.—My life and work.
 Macleod, J. M. H.—Practical handbook of the pathology of the skin.
 The Medical reports of John Y. Bassett, M.D.—The Alabama student.
 Miller, E.—The neuroses in war.
 Mims, E.—Chancellor Kirkland.
 Nakashian, A.—A man who found a country.
 Riddell, V. H.—Blood transfusion.
 Salter, W. T.—The endocrine function of iodine.
 Stanley, L. L.—Men at their worst.
 Topley, W. W. C.—Authority, observation and experiment in medicine.
 Webster, J. H. D.—Periodicity and cause of cancer.
 Wilson, S. A. K.—Neurology.

For Sale—

G. E. shock-proof, mounted or bed-side unit X-ray machine of late model F-2. Recently factory inspected and o.k'd. Has been used less than one year. Consists of foot switch, hand time, fluoroscope, and mobile stand. Cost \$645, but will sell for \$400. Reason for selling—have two machines. Pictures sent on request. Dr. W. B. Barton, Stonega, Va.

(Adv.)

Wanted—

Physician. Preferably young man who has had some experience in psychiatry or who wishes to enter this field; to associate in psychiatric work in nervous and mental private hospital. An attractive position with opportunity if he succeeds in the work. Address BXY care of this JOURNAL.

(Adv.)

For Sale—

Short wave diathermy, examining table, cabinet, and instruments. Reasonably priced. Address No. 175, care of this JOURNAL.

(Adv.)

Obituary Record

Dr. Joseph Augustus White,

Richmond, Va., one of the foremost specialists of the country in diseases of the eye, ear, nose and throat, and the pioneer of this work in Virginia, died February 16, from the infirmities of age. Had he lived until April 19, he would have been ninety-three years of age. Dr. White was a native of Maryland and graduated in medicine from the University of Maryland in 1869, following which he spent three years abroad in postgraduate work, and was attending clinics in Berlin at the time of the Franco-Prussian War, which enabled him to make a special study of war casualties. Upon his return to this country, he practiced surgery for a few years in Baltimore, before coming to Richmond to take up his specialty in 1879. His work here made him known as one of those who had done most for Southern medicine and many honors came to him in national as well as local organizations. Among these he was a former president of the Richmond Academy of Medicine, the Tri-State Medical Association of the Carolinas and Virginia, the Medical Society of Virginia, the American Laryngological, Rhinological and Otological Society, and also served on committees in these and other societies. He was one of the founders of the University College of Medicine in Richmond and a professor in that and later the Medical College of Virginia until about ten years ago.

Dr. White was endowed with a pleasant personality and kindly sense of humor which made him an addition to any group. He was prominently identified with the social interests of Richmond and was connected with many of its clubs. A daughter and several grandchildren survive him.

Dr. Edward Anderson Holmes,

Widely known physician of Marion died February 4. He was born in Tazewell County in 1873 and graduated from the University of Virginia, Department of Medicine, in 1897. Since that time, Dr. Holmes had practiced in Smyth County. He was County Coroner for eight years and vice-chairman of the County Welfare Board. Dr. Holmes had been a

member of the Medical Society of Virginia for forty years. His wife and several children survive him.

Dr. Moses Hoge Tredway,

Prominent physician of Emporia, died February 8, following an emergency operation. He was forty-five years of age and a graduate of the Johns Hopkins University School of Medicine in 1911. Dr. Tredway had practiced in Emporia since his graduation. He had been a member of the Medical Society of Virginia for twenty-six years. His wife and a daughter survive him.

At a called meeting of the Steering Committee of the Fourth District and Southside Virginia Medical Society held in Petersburg on February 20, 1941, the following resolutions were adopted:

WHEREAS, our friend and colleague, Moses Hoge Tredway, was separated from us by death on February 8, 1941, and

WHEREAS, he was a generous, diligent, efficient and greatly beloved physician, and

WHEREAS, we feel a great grief from our loss, NOW THEREFORE BE IT RESOLVED:

First, that we express our profound sorrow at his passing and our sympathy to his family and relatives,

Second, that these resolutions be placed in our minutes, and

Third, that a copy be sent to the VIRGINIA MEDICAL MONTHLY, and

Fourth, that a copy be sent to his family.

WRIGHT CLARKSON, *Chairman*

MEADE EDMUNDS

FLETCHER WRIGHT

C. EDW. MARTIN, *Secretary*.

Dr. William Elbert Jennings,

Well-known Danville physician, died unexpectedly on January 26, following a heart attack, although he had not been in good health for some time. He was a native of Bedford and fifty-five years of age. Dr. Jennings graduated from the Medical College of Virginia in 1909 and had practiced in Danville for thirty years, specializing in allergy. He was a Mason and a member of the Danville Rotary Club. Dr. Jennings joined the Medical Society of Virginia in 1910. His wife, three brothers and two sisters survive him.

Dr. Thomas Bernard Latane,

Formerly of Stevensville and for many years a practicing physician in King and Queen County, died February 18. He was sixty-nine years of age and a graduate in medicine from the University of the South, Sewanee, Tenn., in 1903. Dr. Latane had

been a member of the Medical Society of Virginia since 1904, and retired from practice about a year ago. Three sisters survive him.

Dr. Phil Hawkins Neal,

Eye, ear, nose and throat specialist of New York, died in that city on January 22. He was a native of South Boston, Va., and forty-four years of age. Dr. Neal graduated from the Medical College of Virginia in 1923, and had continued membership in the Medical Society of Virginia since leaving this State. His wife and two children survive him. Dr. J. J. Neal of Danville is a brother.

Dr. Thomas William Mason Long,

Of Roanoke Rapids, N. C., secretary-treasurer of the Medical Society of the State of North Carolina, died suddenly February 3, following a heart attack. His death occurred in Raleigh where he was attending General Assembly as Senator from Halifax County. Dr. Long was fifty-five years of age and a graduate of the former University College of Medicine in Richmond, in 1908. He was a recognized leader in medical affairs of his State and active in civic affairs. He had been a member of the General Assembly of his State for the past ten years, and had been sponsor of a number of bills for improvement of health conditions in North Carolina.

Sir Frederick Banting,

Co-discoverer of insulin and a Nobel prize winner, was killed in a military airplane accident on February the 20th. He was professor of medical research in the University of Toronto before joining the Canadian Army Medical Corps at the beginning of the present war, and held the rank of major at the time of his death.

Dr. Albert Benjamin McCreary,

State Health Officer of Florida, died in Jacksonville on January 24, at the age of forty-five. He was formerly health officer of Northampton County, Va.

Dr. Charles Wardell Stiles,

Internationally known as a zoologist and the discoverer of the "hookworm" died at the Marine Hospital, Baltimore, Md., January 24, where he had been under treatment for a heart ailment. He won his Ph.D. degree from Leipzig in 1890, and was the recipient of many honorary degrees, one of these being from the Medical College of Virginia.

Dr. William Oliver Smith,

Well-known physician of Altavista died on December 17, 1940, after having been in declining health for the past three and one-half years, at which time he retired from active practice. He was born in Bedford County July 30, 1869, and graduated in medicine from the former University College of Medicine, Richmond, in 1898. Before coming to Altavista in 1908, Dr. Smith practiced at Gretna, Virginia, and in Pittsylvania County. He was interested in and took an active part in the civic, social and religious activities of the community. He is survived by his wife, two sons and two daughters.

WHEREAS, a wise Providence has seen fit to remove from our midst our respected and loyal colleague, Dr. W. O. Smith, who for many years has been an outstanding physician in Campbell and Pittsylvania Counties, and who practiced medicine tirelessly, charitably and diligently, now therefore be it

RESOLVED, That we, the members of the Lynchburg Academy of Medicine, regret the death of our friend and associate which deprives us of a sympathetic and faithful member; and,

That in his death the medical profession of our state, and especially the community in which he lived, have sustained a great loss; and,

BE IT FURTHER RESOLVED, That we extend our heartfelt sympathy to his family in their bereavement and,

That a copy of these resolutions be placed upon the minutes of our Lynchburg Academy of Medicine, a copy be sent to Dr. Smith's family, and to the VIRGINIA MEDICAL MONTHLY.

JAMES R. GORMAN,
PAUL KENT,
CARLTON MOORMAN,
Committee.

Resolutions on the Death of Dr. Emory Hill.

SEPTEMBER, 1883—DECEMBER, 1940.

There comes a time in the lives of men when the inevitable call must be answered. The greatest void is left by those valiant few who, like Dr. Emory Hill, have both pioneered and taught.

THEREFORE, BE IT RESOLVED by the Richmond Academy of Medicine assembled to express its sorrow in the death of this great physician and fellow-member:

Born in Scottsville, in Albemarle County, Virginia, of notable ancestry, educated in the Athenian schools of this State, receiving his A. B. degree from Columbia University, teaching to help to obtain his professional education at the Medical College of Virginia, this fine product of his environment went to wider fields to perfect himself in the specialty of ophthalmology. At the Infirmary for Nervous Diseases, and at the Wills Eye Hospital in Philadelphia, he came under the tutelage of such men as S. Weir Mitchell, George E. de Schweinitz, Frank Fisher, Charles A. Oliver, Samuel D. Risley, Conrad Berens, Sr., P. N. K. Schwenk, McCluney Radcliffe, S. Lewis Ziegler, William Zentmayer, and William

Campbell Posey—men whose names freshen our memories as the best in Neurology and Ophthalmology. From among this group some of his most lasting friendships were formed. He then went to Chicago in association with Cassius Westcott, and served in the eye clinic of Rush Medical College. While there, he made brilliant contributions to the pathology of the pituitary gland, upsetting certain accepted ideas of its connection with the eye.

Dr. Hill was gaining a large practice and high reputation when, in 1919, there occurred an opening in Richmond for pioneer practice in certain aspects of ophthalmology and a teaching connection with his Alma Mater. His only stipulation for acceptance was that he be allowed half of each day for clinical and laboratory work. From Richmond his accomplishments radiated to become nationwide. The honors that came to him were too numerous to be detailed here. Suffice it to say that in 1930 he followed Dr. J. A. White as Professor of Ophthalmology at the Medical College of Virginia, and was secretary for many years of the American Ophthalmological Society. He never gave up his investigative and clinical inclinations, in spite of many outside duties. And he had the relatively rare virtue of being able to stimulate study and research in others. Dr. Hill cooperated with Mr. L. L. Watts in establishing the sight-saving classes in the public schools. He personally examined each applicant. This program has extended through the State.

Emory Hill had a brilliant mind, quick in conception and clear in thought, while at the same time he was an arduous student. No one fooled him, and he never fooled himself. He had the ability to express himself succinctly, frankly, and with absolute fearlessness. These faculties made him an exceptional teacher, a wise counselor, an outstanding physician, and a cultured and courageous gentleman. He was not the type of teacher who is more interested in his own institution than in education.

Emory Hill was so interested, so direct and so truthful, that he was sometimes misinterpreted as being abrupt; but no man had a heart more kind. He would enucleate the eye of a pet dog as antiseptically and as skillfully as that of an important patient. He gave of his knowledge and of himself unsparingly when there was no hope of reward; and, even when ill, would get out of bed to see cases with minor conditions, because he knew that they did not seem insignificant to the patient.

Emory Hill was a devoted husband and father, a loyal friend, an illustrious ophthalmologist, a learned scholar, a great teacher, and a truthful and courageous man.

THEREFORE, BE IT FURTHER RESOLVED that as an expression of our admiration of his life and of our sorrow at his passing, a copy of these resolutions be given to the daily press, to the VIRGINIA MEDICAL MONTHLY magazine, and to his family.

BEVERLEY R. TUCKER,
M. PIERCE RUCKER,
ROBERT N. COURTNEY,
Committee.



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The swaddled infant pictured at right is one of the famous works in terra cotta exquisitely modeled by the fifteenth century Italian sculptor, Andrea della Robbia. In that day infants were bandaged from birth to preserve the symmetry of their bodies, but still the gibbous spine and distorted limbs of severe rickets often made their appearance.



A bambino from the Foundling Hospital, Florence, Italy, — A. della Robbia

Glisson, writing in 1671, described an ingenious use of swaddling bands — "first crossing the Brest and coming under the Armpits, then about the Head and under the Chin and then receiving the hands by two handles, so that it is a pleasure to see the Child hanging pendulous in the Air . . . This kind of Exercise . . . helpeth to restore the crooked Bones. . . ."

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SWADDLING was practised down through the centuries, from Biblical times to Glisson's day, in the vain hope that it would prevent the deformities of rickets. Even in sunny Italy swaddling was a prevailing custom, recommended by that early pediatrician, Soranus of Ephesus, who discoursed on "Why the Majority of Roman Children are Distorted."

"This is observed to happen more in the neighborhood of Rome than in other places," he wrote. "If no one oversees the infant's movements, his limbs do in the generality of cases become twisted. . . .

Hence, when he first begins to sit he must be propped by swathings of bandages. . . ." Hundreds of years later swaddling was still prevalent in Italy, as attested by the sculptures of the della Robbias and their contemporaries. For in-

fants who were strong Glisson suggested placing "Leaden Shooes" on their feet and suspending them with swaddling bands in mid-air.

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Official Publication of the Medical Society of Virginia

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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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Vol. 68, No. 4.
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RICHMOND, VA., APRIL, 1941

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THE IMPORTANCE OF NEURO-PATHOLOGY TO PSYCHIATRY.*

JAMES B. PETTIS, M.D.,
Western State Hospital,
Staunton, Virginia.

That neuro-pathology, through anatomical and biochemical investigations, has made a positive contribution to psychiatry goes without questioning. But there has been a tendency among psychiatrists in the recent past to ignore the structural patterning of man, and to divorce soma and psyche and to treat the mind as a thing apart. While our vision of the so-called organic field has deepened and widened, we are still inclined to regard deviations of mental and emotional nature as disease units in themselves. Surely the time has come to put away the notion that psychiatry deals with just mind disease. We have to dig below the surface of morbid phenomena to find the toxic or chemical or glandular origins of disease—often heavy and seemingly unprofitable labor, but work which is the very stuff of medicine, and on which one day will be established a real pathology of mind.

A glance at the yearly reports of some of our State Hospitals would indicate that research in the field of neuro-pathology is all but a lost art. To support this contention, I cite the records of the hospital with which I am connected. From January 1, 1939, to December 31, 1939, we had a total of one hundred and eighty-eight deaths. Of these thirty-three were unclaimed bodies. Yet not a single autopsy was performed. I am certain that, had only a few of these cases come to autopsy, some very interesting findings would have been obtained. At least the cause of death could have been verified.

The population of our Mental Hospitals is growing by leaps and bounds. Statistical tables are frightening when comparisons are made over several decades. In our four State hospitals and two colonies, there are more than ten thousand persons—because of mental diseases, feeble-mindedness, epilepsy,

personality defects, and criminality. This in itself is a real challenge to those of us who are practicing psychiatry in these institutions. Here we have the material for research—both the living and the dead. We have the advantage over the physicians of the private sanatoriums because of the large number of indigents who leave us, as their beneficiaries, their bodies for study.

It should put us to shame that the neuro-pathological research done in this State, aside from that of the two medical colleges, is done almost entirely by the staff members of the private sanatoriums. They seize every opportunity for post-mortem study. Only recently, from conversation with a neuro-psychiatrist associated with one of the private sanatoriums, I learned of the intense study every member of their staff makes routinely on every post-mortem they can obtain. They do this to better their own knowledge of the anatomical structure of the body, and at the same time to attempt to establish the etiology of the mental abnormality.

In our search for the causes of mental diseases, we are reminded of the maxim laid down by Osler, "Observe the patient, verify in the laboratory, and by autopsy." Medical science's chief frontal attack on the mental diseases should be the tried weapons long used against somatic diseases, namely, the laboratory and the autopsy table. Compilation of symptoms and diagnosis are not sufficient. The history of medical successes proves that the method of prevention and the cure of a disease has never been established through the study of its symptoms alone. Biochemical, bacteriological, and anatomical changes underlying it have to be studied before science is able to understand it and control it. The control of our major diseases of the past, such as tuberculosis, typhoid fever, diphtheria, diabetes, etc., has been brought about by this line of attack. We have gained

*Read before the Neuro-Psychiatric Society of Virginia, February 7, 1940.

a knowledge of several of our major mental diseases through this same procedure. For example, the Wassermann reaction pointed out that syphilis was the cause of paretic dementia, and it remained for Noguchi to demonstrate through neuro-pathological methods, that the spirochaeta of pallida could be found in the walls of the blood vessels and in the cells of the brains of the paretic. We now take all of this for granted, yet at the turn of the century practically nothing was known of the underlying pathology of paresis. And we still have no specific knowledge of the causes of the two great scourges of our civilization, dementia praecox and manic depressive psychosis.

The writer recalls studying a large number of case histories in the dead files of a large mental hospital. These histories were compiled during the last decade of the 19th century and the early part of the present century. They were exceptionally good records of the symptoms and behavior reactions of the patients. On the front sheet of each case history was outlined the name of the patient, date of admission, diagnosis, and *last*, but not *least*, the cause of the insanity. Through reading and studying the symptoms of some of these patients one could very easily pick out the now known classical symptoms of paresis. In that day and age, *masturbation* seemed to be the chief cause of the mental ills which afflicted the patients. In fact, some ingenious person had had a rubber stamp made which was used to record this fact for the benefit of posterity. As to the diagnosis, *melancholia* was the favorite term.

By making a study of the brains of patients who have died from paresis, tumors, arteriosclerosis, etc., we are gaining a better understanding of the manner of production of particular symptoms.

By locating a specific lesion in the nervous system and by correlating other pathological findings with the mental behavior of the patient, we understand better the function of certain areas of the brain. Through post-mortem studies of brain tumors light has not only been thrown upon the general motor and sensory functions of the brain, but also upon the fields of memory, language, and personality.

From these studies, we learn that even such psychic symptoms as hallucinations, delusions, and disturbances of the sensorium follow damage to certain groups of nerve cells. In the field of surgery, this knowledge has guided us in differentiating between certain so-called functional psychosis and certain or-

ganic conditions. We see not infrequently brain tumors that objectively and subjectively give symptoms similar to senile deterioration. We not infrequently diagnose cases subjectively as senile deterioration or cerebral arteriosclerosis, or even as paranoia, that later at the autopsy table prove to be cases of brain tumor.

Some authorities have demonstrated that there is a structural change in the glia and in the brain cells of patients who have suffered with dementia praecox. We know that with alcohol and certain other drugs we can produce in patients psychic symptoms which simulate manic-depressive or even schizophrenic features. This is a temporary biochemical effect on the central nervous system.

More research is needed before any definite conclusion can be made, but we have some very good leads here to indicate that mental diseases such as schizophrenia and manic-depressive are more than functional diseases.

The purpose of this paper is not to provoke an argument between the two schools of thought, but to call to the attention of the physicians on the staffs of our Mental Hospitals, the opportunity which is ours for neuro-pathologic research. Our State hospitals should be something more than hospitals—they should be centers of research. In them, laboratory work should go on, which will lead, we hope, to the discovery of the causes of the now baffling mental ills. Such discovery will in turn direct us to the cures of the diseases, or, better yet, to their prevention.

I should like to see our hospitals establish contact with physicians in private practice by holding monthly neuro-pathological conferences to which the physicians from nearby communities would be invited. A tremendous amount of interest can be stimulated in psychiatry by presenting at these conferences complete case histories, including laboratory and autopsy findings along with gross specimens, and, in some instances, slide specimens. Such conferences will serve a two-fold purpose. They will provide incentive for study and research to the staff physicians, and also they will be of tremendous educational value in selling psychiatry to the general practitioner.

By such a program of study and research, state institutions will earn a better name than "Mansions of Ignorance". They will gain the respect of scientists everywhere, and, more important, they will be

taking a big step forward toward controlling this baffling thing called mental disease.

They have the material and the opportunity; let them set up the machinery to make use of this material and opportunity. I should like to see a competent resident pathologist and a well equipped laboratory in each of our State hospitals and a yearly batting average of at least 40 per cent post-mortem examinations in all of our State institutions.

To summarize:

1. We must evolve a pathology for neuroses and psychoses—and they are only two parts of the same spectrum, through medicine. The effort to do so through philosophy and psychology has not succeeded.

2. More intense research in neuro-pathology is necessary if mental diseases are to be controlled.

3. The logical place for such a program of neuro-pathological research is in the State hospital, where there is a wealth of material. What is needed to set up such a program is a real interest on the part of the staff members of the mental hospitals, together with the necessary laboratory equipment for carrying on the work. The addition of a competent pathologist to the staffs of these hospitals would be the first step in this direction.

DISCUSSION

DR. D. C. WILSON, Charlottesville: Dr. Pettis has presented several interesting concepts. First, that psychology and philosophy have failed to explain the causes of psychoses and neuroses, and therefore we must return again to structure for etiological reasons for their existence. Certainly it is true that therapy based on personality reactions in which the material side of the personality reaction is not considered, is bound to fail. Personality is certainly composed in large part of soma, and lack of knowledge of the changes in the soma whether they are physiological or pathological, makes intelligent understanding and treatment of the personality disorders impossible. His next proposition that intense research should be applied to the neuropathology of mental disease must be considered with the real common sense attitude that the large proportion of personality reactions are not based on structural changes which can be demonstrated by so-called neuropathological studies and that very likely the research which will explain mental diseases will be in the fields of physiology and biochemistry. Certainly this is true unless newer methods of neuropathological investigation are developed. However, the material part of personality bears the imprint of the life history so that every autopsy brings to light things of structure which explain many of the complexes which seemed entirely psychological

during life. Also, much is learned of the methods of future care of similar patients. Certainly a hospital which does not have a high percentage of post-mortem examinations cannot do first-class work. As Dr. Pettis says, the state hospitals of Virginia have a great fund of material which should be investigated. This investigation above everything else stimulates the staff and improves their efficiency. Also there is no reason why deeper forms of investigation should not arise from laboratories which are placed in these institutions.

DR. BEVERLEY R. TUCKER, Richmond: This paper of Dr. Pettis' is a very intelligent and a very courageous expression of truth. I suppose truth always hurts but nothing is more helpful than truth. As far back as 1894 Dr. Weir Mitchell, making an address in Chicago as invited guest to the Association of American State Asylum Superintendents, as the American Psychiatric Association was then known, offended his audience by telling them they were neglecting their duty and missing a valuable opportunity in not having laboratories in their institutions and in not performing autopsies. This paper, however, made many of them go back and start pathological departments. The knowledge gained has been great but there is yet, and always will be, much to be done for medicine is never static—except when we and our institutions are static.

I recall being asked to sit on two commissions of lunacy in each of which it was apparent that the patient had a marked hypopituitarism. I suggested that the commissions be postponed and the patients given pituitary feeding. In each instance the mental symptoms cleared entirely in a few weeks.

Many years ago I sent to a large distant clinic a patient on whom I had made the diagnosis of a temporal tumor. She was studied for several weeks and sent back to me with the diagnosis of an hysterical psychoneurosis. In a short time upon re-examination I sent her back asking that she be operated on. This was hesitantly done and a large tumor was found.

Due somewhat to lack of money and training neuro-pathology is neglected in many of our southern state hospitals. Let this not be the case any longer. Let us rather remember that many of the great pathologists in the past worked in sheds with but little assistance and few instruments. All that is needed is a table, a little equipment, a body, and a doctor who is anxious to do the autopsy.

I hope that this clear call of Dr Pettis' will be heeded and that the stigma of unprogressiveness will be removed from our institutions. It is probable that no mental illness comes out of a clear sky without pathologic background. Gold is rarely found without prospecting for it.

DR. JAMES ASA SHIELD, Richmond: I think Dr. Pettis has pointed to a great opportunity that doctors in mental hospitals are missing when they do not correlate their studies of the patient with autopsy findings.

At the Medical College of Virginia we receive autopsy material from the Eastern State Hospital and the Cen-

tral State Hospital and from these two sources the autopsy material frequently throws light on the previous clinical manifestations, and the excellent observations

and studies at these hospitals help us in the practice of medicine from the correlation of the hospital records and the pathological specimens.

SPIROCHETAL JAUNDICE (WEIL'S DISEASE).*

NATHAN BLOOM, M.D.,

and

HARRY WALKER, M.D.,

Richmond, Virginia.

Although spirochetel jaundice cases have been reported in large numbers since 1916 in foreign countries, it seems to be a rare disease in the United States. We are of the opinion that the condition is much more common than would be expected by the material published up to this time in our literature. It is possible that this discrepancy is not due to a lack of cases but probably due to the inability to recover the organism from the blood or urine. Agglutination studies will very frequently confirm the diagnosis when the blood and urine are negative. It is hoped that in the future agglutinative studies will be easily obtainable through cooperative public health facilities.

The characteristic clinical phenomena of an acute febrile state, extreme prostration, generalized aches, muscular pains, particularly in the calf muscles, and later jaundice with evidence of severe kidney damage, are unmistakable to any observer familiar with this disease. Probably the most important differential points are the muscular pains and the kidney involvement. These may be present in catarrhal jaundice but not to the extent noted in spirochetel jaundice. Autopsy studies on cases that have succumbed invariably reveal an interstitial nephritis, inflammatory destruction of skeletal muscle, and a retention type of jaundice, with slight degenerative changes in an enlarged liver.

In the past five years, seven cases of spirochetel jaundice were admitted to the Medical College of Virginia, Hospital Division, and the object of this study is to present five of these cases with their autopsy findings and the other two cases with recovery. It is believed that more cases have been seen but were classified as catarrhal jaundice on account of negative laboratory findings and the lack of autopsy confirmation.

*From the Department of Internal Medicine, Medical College of Virginia, Richmond, Va.

CASE I

A colored male, R. A., thirty-four years old, was admitted on November 3, 1936, with a history of having been ill seven days before admission with a sore throat and generalized aching about the body. He had fever and had become delirious after several days. A yellowish discoloration of the eyes was noted the day before admission. The family and past history were irrelevant.

Physical Examination. An emaciated, dehydrated, colored male in a semi-conscious state, incoherent and irrational. The neck was rigid. There was marked jaundice of the sclerae. The chest and lungs were negative. The heart rate was rapid and regular, a systolic murmur was heard over the entire precordium, the blood pressure was 135 mm. of mercury systolic and 60 mm. diastolic. The spleen and liver were not palpated. The extremities and reflexes were negative.

Laboratory Data. The specific gravity of the urine was 1.012, with 1 plus albumin and negative sugar; it was strongly positive for bile and the microscopic examination was negative. The blood revealed a Sahli hemoglobin of 85 per cent, 4,600,000 red blood cells, 26,500 white blood cells, with 86 polymorphonuclear neutrophils, 12 lymphocytes and 2 monocytes. The blood sugar was 113 mgms. per 100 cc., the non-protein nitrogen was 138 mgms. per 100 cc., creatinine 3.4 mgms. per 100 cc. The icteric index was 135, the Van den Bergh was 13 mgms. with an immediate direct reaction. The spinal fluid contained 39 white blood cells, 30 lymphocytes and 9 polymorphonuclears. The fluid was bile stained. The Wassermann was negative. Blood cultures and urine cultures were negative.

Course in Hospital. The temperature on admission was 103 degrees Fahrenheit. It immediately rose to 105 and then suddenly dropped to 99.4. This was

followed by another rise to 102, remaining at this level until the patient's death two days after admission. The patient remained irrational and semi-conscious.

A lumbar puncture revealed clear bile-stained fluid under increased pressure. A roentgenogram of the chest showed the lungs to be clear and there was no enlargement of the heart.

The patient was given intravenous fluids and large doses of liver extract intramuscularly but did not respond, and finally succumbed on November 5, 1936. The diagnosis was acute hepatitis.

Pathology. At autopsy it was noted that the body was markedly jaundiced. The striated muscle was fairly well developed. There was no free fluid in the thorax. The serous surfaces showed a striking yellow color.

The heart weighed 430 grams. The coronary vessels were patent; the ascending portion of the aorta was smooth and elastic and the heart itself seemed normal except for the yellow color of the endocardial structures. There were extensive irregular patches of congestion in both lower lobes of the lungs. The trachea and larger bronchi were markedly edematous and injected.

The serosal structures in the abdomen had a marked yellowish color with a greenish tinge. The spleen weighed 100 grams and the cut surface was not unusual. The right kidney weighed 360 grams and the left kidney 430 grams; both were markedly enlarged but moderately firm in consistency. The capsules stripped easily; the cortex and medulla were well differentiated.

The pelvis was injected and distinctly yellowish in color; they were not dilated. The ureters appeared normal. The liver weighed 2,180 grams. The capsule was smooth and was pale brownish in color. There were distinct lobular markings of the parenchyma, which was firm and did not show signs of edema. No necrotic foci were noted. The gallbladder was moderately distended with dark green bile. The bile ducts were patent. The calf muscles of the legs were not unusual to gross examination.

Microscopic pathological study showed slight fibrous thickening and small round cell infiltration in the epicardium of the heart. The lungs revealed patches of bronchopneumonia and a purulent bronchitis. There was a moderate increase of polymorphonuclear cells in the spleen. The kidneys showed marked edema and there were scattered foci

of interstitial infiltration with small round cells and occasionally a few polymorphonuclear cells. The infiltration was scattered throughout the cortex. The liver showed marked dissociation of liver cell cords and slight edema, partly in the center of the lobules. There were small deposits of bile pigment in the liver cells. Several sections from the striated muscle revealed multiple discrete areas of muscular necrosis with cellular reactions. There were minute hemorrhages and proliferation of the cells of the perimysium, in some areas forming giant cells. The muscle fibers themselves had undergone complete disintegration.

Summary. The presence of severe jaundice with slight changes in an enlarged liver, and also evidence of a marked interstitial nephritis with degenerative changes in the striated calf muscles, was considered diagnostic of spirochetal jaundice.

Comment. It is doubtful whether an accurate antemortem diagnosis could have been suggested in this case. The patient only lived two days after entering the hospital. A coherent history was not available and the patient was so irrational that generalized or calf muscle pain could not be elicited. The laboratory studies were also negative. The pathological picture was so characteristic that it is questionable whether any other diagnosis could be accepted.

CASE II

A white male, L. W., thirty years old, was admitted on December 16, 1938, with a history of having been taken ill fourteen days before admission with high fever, generalized aching, loss of appetite, nausea, and vomiting. After about a week of chills and fever the patient began coughing, with expectoration of considerable quantities of bright red blood. He developed severe pain in the calf muscles and it was noticed that his urine was dark brown in color and that he had become jaundiced, with development of red blotches over his chest and abdomen. The family and past history were irrelevant.

Physical Examination. A husky, well nourished, male, lying quietly in bed, well oriented but markedly jaundiced. The temperature was 103 degrees Fahrenheit. The sclerae were not only jaundiced but several large hemorrhages were noted in both conjunctivae. The neck was not rigid. Several large erythematous areas were noted over the chest wall. An occasional râle was heard in the lung bases. The heart was not

enlarged, the rate was rapid but regular, the blood pressure was 110 mm. of mercury systolic and 35 mm. diastolic. The liver edge was felt 4 cm. below the right costal margin, the spleen was not palpated. There was marked tenderness on deep pressure over the muscles of both lower extremities, the deep reflexes were hyperactive but there were no pyramidal tract signs.

Laboratory Data. The specific gravity of the urine was 1.025, with a 1 plus albumin and a trace of sugar, it was strongly positive for bile and the microscopic was negative. The blood revealed a Sahli hemoglobin of 80 per cent, with 3,560,000 red blood cells, 15,400 white blood cells, with 95 polymorphonuclear neutrophils, 4 lymphocytes and 1 monocyte. The blood sugar was 105 mgms. per 100 cc., the non-protein nitrogen was 75 mgms. per 100 cc., the creatinine 3.7 mgms. per 100 cc. The icteric index was 176. The total serum protein was 3.9 gms., with 2.9 gms. of albumin, and 1 gm. of globulin per 100 cc. The Wassermann was negative. The blood culture was negative and cultures of the urine, including dark-field studies, were negative for spirochetes. Guinea pig inoculation was reported as negative at a later date.

Course in Hospital. The temperature on admission was 103 degrees Fahrenheit. It gradually dropped in the next two days to 98 degrees Fahrenheit. During this period the pulse increased from 110 to 130 and the respiration from 20 to 40 per minute. The patient was given two blood transfusions and large quantities of glucose intravenously. His jaundice seemed to increase and he developed breath sound changes and more moisture in both lung bases. The patient became semiconscious and died two days after admission. The diagnosis was spirochetal jaundice with terminal bronchopneumonia.

Pathology. At autopsy the body was well developed and markedly jaundiced. There were no hemorrhages into the skin but hemorrhage was noted in the sub-conjunctival tissues of the eyes. There was no free fluid in the thorax.

The heart weighed 425 grams. The ascending aorta and coronary vessels were normal in appearance. The epicardium, endocardium, and myocardium had a normal consistency but were bile stained. The trachea and larger bronchi were moderately injected. There were extensive irregular patches of congestion in both lower lobes of the

lungs. The peritoneum was normal in appearance.

The spleen weighed 350 grams; it was soft and the pulp was dark red. The kidneys weighed 350 grams each. They were markedly enlarged and edematous. The capsules stripped easily. The cortex and medulla were well differentiated. The cortex had a definite yellowish-green striation.

A few scattered hemorrhages were present in the mucosa of the pelves. The liver weighed 2,500 grams. It was markedly enlarged. The lobules were fairly distinct, being accentuated by reddish, yellow, and brown areas. No areas of hemorrhage or necrosis were seen. The entire liver was deeply bile stained. The gall-bladder was not unusual. The calf muscles were dark red in color, but normal in consistency.

Microscopic pathological study revealed scattered focal areas of polymorphonuclear infiltration and hemorrhage in the interstitial tissues of the heart. No thrombi were noted. The lungs revealed marked congestion about the blood vessels, with hemorrhage into the alveoli. The polymorphonuclear cells were increased in the pulp of the spleen. The essential changes in the kidneys were scattered focal infiltrations with polymorphonuclear cells, plasma cells and lymphocytes, especially in the cortex. There were no degenerative changes in the tubules, the glomeruli and blood vessels were essentially normal. There was a moderate dissociation of the liver cell cords. The liver cells were distinctly smaller but normal and numerous polymorphonuclear cells and lymphocytes were present in the interstitial tissues. Several sections from the gastrocnemius muscles revealed swollen fibers that had lost their striations. The nuclei and cytoplasm were homogeneous and took a deep eosin stain; other fibers had become completely disintegrated and the remains were identified as irregular eosin-stained masses around which were numerous inflammatory cells.

Summary. The marked degeneration of the calf muscles with evidence of an interstitial nephritis and severe non-obstructive jaundice with only moderate changes in an enlarged liver was considered diagnostic of spirochetal jaundice.

Comment. Although in this case the entire duration of the disease was about ten days, the ante-mortem diagnosis was suggested when the patient was first seen. The history and the objective findings of jaundice, an enlarged liver, and acutely painful calf muscles, completed the syndrome. The pathological diagnosis substantiated the clinical picture. It must

be noted again that the laboratory studies were negative.

CASE III

A colored male, W. A., forty-two years old, was admitted on August 13, 1938. He had been a patient in May, 1937, and at that time was found to have hypertensive heart disease, generalized arteriosclerosis, and congestive heart failure. Since that time he had attended the outpatient clinic and had apparently been in fair condition up to two weeks before admission. He began complaining of generalized aching about the body, lost his appetite, was nauseated, and had a profuse watery diarrhea. There was some frequency of urination and at times the patient thought he had a fever. Jaundice was not noted at home but he became progressively weaker and was finally referred to the hospital. The family and past history were irrelevant except for the heart condition.

Physical Examination. A markedly dehydrated colored male, apparently alert and oriented. The neck was not rigid, there was marked jaundice of the sclerae, the retinae revealed moderate arteriosclerosis of the vessels. The heart was enlarged to the left, there was a soft systolic apical murmur, the rhythm was regular. The blood pressure was 190 mm. of mercury systolic and 70 mm. diastolic. The lungs were clear, there was generalized tenderness about the abdomen, no masses were palpable, and the extremities and reflexes were negative.

Laboratory Data. The specific gravity of the urine was 1.024, 2 plus albumin and negative sugar, it was strongly positive for bile, and the microscopic examination showed 15 to 20 white blood cells. The blood revealed a Sahli hemoglobin of 75 per cent, with 3,870,000 red blood cells, 8,300 white blood cells, with 84 polymorphonuclear neutrophils and 16 lymphocytes. The blood sugar was 135 mgms. per 100 cc., the nonprotein nitrogen was 150 mgms. per 100 cc., creatinine 7.1 mgms. per 100 cc., total cholesterol 114 mgms. per 100 cc., phosphatase 3.2 Bodansky units. The Wassermann was negative. The icteric index was 296 units. Blood and urine cultures were negative and guinea pig inoculation did not reveal any leptospira at the time of the pig's death.

Pathology. At autopsy the body was poorly nourished and markedly jaundiced. There was a small amount of fluid in the pleural cavity.

The heart weighed 630 grams. The ascending aorta was yellowish in color and the coronary vessels

were patent. The heart was generally enlarged; all the tissues were stained yellow. The lungs were a pinkish-gray in color except in the right lower lobe, which was a dark purplish-red. Cut sections revealed similar areas of congestion throughout the deeper portions of the lower lobes. The peritoneum was normal in appearance.

The spleen only weighed 150 grams. It was dark red in color. The adrenal glands appeared normal. The kidneys weighed 220 grams each. They both appeared swollen and less firm than normal. The cortex had a definite greenish-yellow color.

The stomach was not unusual. The gall-bladder was empty and appeared normal. The liver weighed 2,300 grams; it was greenish-yellow in color. The calf muscle was dark red in color but normal in consistency.

Microscopic pathological study revealed large areas of hemorrhage throughout both lungs; many hyaline thrombi were noted in the smaller blood vessels. The heart and aorta were apparently normal. The spleen and adrenals were normal. There was a severe edema of both kidneys and interstitial infiltration with plasma and polymorphonuclear cells. This infiltration was diffuse throughout the cortex and medulla and also through an occasional glomerulus. The convoluted tubules contained numerous polymorphonuclear cells. The liver revealed a severe bile stasis, especially in the central portion of the lobules. A slight dissociation of liver cell cords was present. The skeletal muscle revealed marked degenerative changes, such as basophilic granulation of the muscle fibers and vacuolic changes of the fibers. Several muscle areas contained large ill-defined cells with vesicular nuclei. There was an occasional infiltrated area of muscle with polymorphonuclear cells.

Summary. The marked interstitial nephritis, associated with minor degenerative changes in the liver and the definite evidence of inflammatory reaction in the calf muscle, was considered diagnostic of spirochetel jaundice. It was thought that the lung condition was an associated bronchopneumonia.

Comment. The clinical course and the pathological findings in this case were considered very suggestive of spirochetel jaundice, but again we did not have bacteriological confirmation.

CASE IV

A colored male, E. B., fifty years old, was admitted on September 1, 1939. He had been in good

health until three days before admission, when he started complaining of pain in the abdomen, associated with diarrhea and vomiting. The abdominal pain grew worse and the vomiting and diarrhea persisted. Three days later it was noted that the patient's eyes had developed a yellowish discoloration. The patient became irrational and semi-comatose. The past and family history were irrelevant.

Physical Examination. A semi-comatose, dehydrated, colored male, irrational and disoriented. The neck was not rigid. There was marked jaundice of the sclerae. The lungs were full of coarse rhonchi; the heart was normal. The blood pressure was 140 mm. of mercury systolic and 90 mm. diastolic. The abdomen was held tensely but no masses were palpable. The left knee was ankylosed, due to an old injury. The reflexes were negative. The semi-conscious state of the patient prevented a determination of any tender areas about the body.

Laboratory Data. The specific gravity of the urine was 1.020, 1 plus albumin, and negative sugar; it was strongly positive for bile, the microscopic examination was negative. The blood revealed a Sahli hemoglobin of 65 per cent, with 3,400,000 red blood cells, 24,000 white blood cells, with 88 polymorphonuclear neutrophils and 12 lymphocytes. The blood sugar was 120 mgms. per 100 cc., the non-protein nitrogen was 130 mgms. per 100 cc. The icteric index was 208 units. The total cholesterol was 87 mgms., free cholesterol 50, cholesterol esters 37 per 100 cc. The Wassermann was negative.

Course in Hospital. The temperature on admission was 100.4 degrees Fahrenheit, pulse 130, respiration 40. The patient only lived for four hours after admission.

Pathology. At autopsy the body was that of a well nourished colored male. All of the tissues were markedly jaundiced. There was no fluid in the pleural cavity.

The heart and aorta were normal except for the jaundice. There was a moderate congestion in both lungs, especially in the lower lobes.

The spleen weighed 175 grams and was dark red in color. The adrenal glands were normal in appearance. The kidneys weighed 250 grams each. They were definitely increased in size. The capsules stripped easily. The surface was pale red, smooth, and glistening.

The stomach and gall-bladder were not unusual. The liver weighed 2,000 grams. It was approxi-

mately normal in contour and size but was bile stained. No obstructive lesions were found in the bile ducts. The calf muscle was normal in consistency and had a dark red appearance.

The microscopic pathological study revealed major changes in the liver and kidneys. The liver damage was characterized by a severe dissociation of the liver cell cords, bile pigmentation of liver cells which contained numerous mitotic figures. There was a severe edema of both kidneys with interstitial infiltration by plasma and polymorphonuclear cells. One section through the calf muscle was negative for inflammatory reaction. Numerous spirochetes were found in the kidneys, spleen, and liver.

Summary. The moderate degenerative changes in the liver and the acute hematogenous interstitial nephritis, with the finding of numerous spirochetes in the kidneys, spleen, and liver, was diagnostic of spirochetal jaundice.

Comment. The interesting factor in this case was the rapidity of the disease, the entire course not lasting over four days. This rapidity may have accounted for the lack of degenerative changes in the calf muscle. The finding of spirochetes was diagnostic of Weil's disease.

CASE V

A colored male, C. Y., sixty-eight years old, was admitted on September 4, 1939. It was stated that he had complained of generalized weakness and aching about the body for several weeks. There was loss of appetite with some vomiting and it had been noted that the patient complained of feeling chilly and was feverish at times. The patient gradually became worse and on admission to the hospital was irrational. There had been two previous admissions. In 1936 a diagnosis of gastric ulcer was established and in 1938 a right indirect inguinal hernia was repaired. Otherwise the past history was essentially negative.

Physical Examination. An emaciated, irrational, very old, colored male, with marked yellowish discoloration of the sclerae. A few moist râles were heard in the bases of both lungs, the heart was not enlarged, there were no murmurs, the heart sounds were indistinct. The blood pressure was 150 mm. of mercury systolic and 95 mm. diastolic. The abdomen was scaphoid, no rigidity or tenderness was elicited. The liver edge was felt just below the costal

margin. There was marked tenderness in the calf muscles. The reflexes were normal.

Laboratory Data. The specific gravity of the urine was 1.016, 1 plus albumin, and negative sugar; it was strongly positive for bile, and revealed 60 to 70 red blood cells per high power field, with a rare cast. The blood revealed a Sahli hemoglobin of 85 per cent, with 4,100,000 red blood cells, 9,200 white blood cells, with 80 polymorphonuclear neutrophils, 2 eosinophils, 3 monocytes, and 15 lymphocytes. The blood sugar was 150 mgms. per 100 cc., the non-protein nitrogen was 163 mgms. per 100 cc. The creatinine was 5.7 mgms. and the icteric index was 179 units. The Wassermann was negative.

Course in Hospital. The temperature on admission was 100 degrees Fahrenheit. It was intermittent during the stay in the hospital and rose as high as 104 degrees. At the time of death the temperature was 98 degrees. A roentgenogram of the chest did not reveal any enlargement of the heart and there was no evidence of any unusual changes in the lungs. A gastrointestinal X-ray examination was negative. The urine continued to show large quantities of bile, but the red blood cells diminished. The white blood count rose to 15,000 cells with 88 polymorphonuclear neutrophils, 10 lymphocytes, and 2 monocytes. The non-protein nitrogen finally reached 320 mgms. per 100 cc. The creatinine was 10 mgms. and the icteric index was 137 units. A dark-field examination of the urine demonstrated many spirochetes. The guinea pig inoculation was negative for spirochetes. A specimen of blood was sent to Dr. Packchianian, National Institute of Health, and was reported as being strongly positive, agglutinating to a high titre for leptospira icterohemorrhagiae. The patient's course was progressively downwards and he finally succumbed on September 16, 1939, twelve days after admission. The diagnosis was spirochetel jaundice.

Pathology. At autopsy the body was that of a slightly emaciated colored male. All of the tissues were markedly jaundiced. There was a moderate congestion of both lungs. The heart was not enlarged and the aorta showed moderate atherosclerosis.

The spleen was approximately normal in size and weight. It was purplish-red in color. The adrenal glands were normal in appearance. The kidneys were moderately enlarged. The capsules stripped easily. The cortex was slightly thickened. The left kidney showed yellowish, rounded, nodular foci containing

necrotic material. The surface was a mottled, yellowish-brown color. The stomach and gall-bladder were not unusual.

The liver weighed about 2,000 grams. It was slightly enlarged and was greenish stained throughout. No obstructive lesion was found in the bile ducts. The calf muscles were normal in appearance and had a dark red color.

The microscopic pathological study revealed major changes in the liver and kidneys. There was a slight dissociation of liver cell cords and bile pigment was present in a great many of the liver cells. The liver cells also contained numerous mitotic figures. Both kidneys were markedly edematous and throughout the cortex and medulla diffusely scattered round cells and polymorphonuclear cells were seen. These foci were more numerous in the cortex than in the medulla. There were numerous bile-stained casts in the tubules. Sections throughout the gastrocnemius muscle contained swollen, degenerated muscle fibers and numerous inflammatory cells.

Summary. The acute hematogenous interstitial nephritis with dissociation of liver cells and striated muscle change were all present in this case. The positive dark-field examination on the urine and the positive agglutination of the blood completed the syndrome of spirochetel jaundice.

Comment. In this case the clinical picture was quite characteristic of the disease and in addition the dark-field examination of the urine revealed spirochetes and agglutination studies were also positive. Pathological studies substantiated the clinical picture.

CASE VI

A colored male, J. E., twenty-five years old, was admitted on August 12, 1940, complaining of headache and abdominal soreness. He had been well until five days before admission, when he suddenly developed cramps, followed by a chill. He then complained of headache, generalized aching, and fever. The patient vomited every day but there was no diarrhea. The day after the onset of his illness it was noticed that his eyes had become yellow. Recently he had received five intravenous injections for syphilis, the last injection about one month before admission. The family and past history otherwise were negative.

Physical Examination. An acutely ill, young, colored male, slightly stuporous but not irrational.

There was marked jaundice over the sclerae and several sub-conjunctival hemorrhages. The chest and lungs were normal. The heart was not enlarged, there were no murmurs, and the rhythm was regular. The blood pressure was 115 mm. of mercury systolic and 70 mm. diastolic. The abdomen was soft, with generalized tenderness, but no masses were palpable. There was some generalized muscular tenderness, both in the arms and in the legs. The reflexes were negative except for diminished knee and ankle jerks.

Laboratory Data. The specific gravity of the urine was 1.014, two plus albumin, sugar and acetone negative, it was slightly positive for bile and there were many white blood cells and an occasional red blood cell per high power field. The blood revealed a Sahli hemoglobin of 89 per cent, with 3,480,000 red blood cells, 17,100 white blood cells, with 86 polymorphonuclear neutrophils, 13 lymphocytes, and 5 monocyte. The blood sugar was 118 mgms. per 100 cc., the non-protein nitrogen was 204 mgms. per 100 cc., creatinine 4.8 mgms. per 100 cc., the icteric index was 168 units. The total cholesterol was 115 mgms., with free cholesterol 56 mgms., cholesterol esters 59 mgms. per 100 cc. The total serum protein was 6.1 grams, with 3.7 grams of albumin and 2.4 grams of globulin. The Wassermann and Kline were positive. Dark-field studies of the urine revealed spirochetes and the blood agglutination was 1-100,000 for leptospira ictero hemorrhagiae.

Course in Hospital. The temperature on admission was 100 degrees Fahrenheit. It gradually dropped to normal in the next few days and remained normal for the entire stay in the hospital. The pulse rate and respiration during this period were within normal limits. The patient gradually improved on symptomatic treatment. The urine still showed a heavy trace of bile but the white blood cells disappeared. The white blood count dropped to 7,300, with 56 polymorphonuclear neutrophils, 3 eosinophils, 34 lymphocytes, and 7 monocytes. The icteric index increased to 250 units but then gradually returned to normal. The non-protein nitrogen also gradually reverted to normal, the final determination being 34 mgms. per 100 cc. The total cholesterol rose to 153 mgms., with free cholesterol 52 mgms., and cholesterol esters 81 mgms. per 100 cc. The patient improved gradually, but finally tired of the hospital and signed his release, thirteen days after admission. We have been unable to follow him since then, but assume that he is now in normal health.

Comment. The interesting factor in this case was the very high titre of agglutination. The acute febrile onset, with jaundice and generalized tenderness over the body, was considered diagnostic of Weil's disease.

CASE VII

A white male, C. M., thirty-three years old, was admitted on August 30, 1940, with a history of having been taken ill five days before admission, with aching over his entire body. He developed a cough and some vomiting, abdominal cramps were very severe, and he had several hard shaking chills. The patient was a junk dealer and had been working up to the time of the onset of his illness. His past history and family history were essentially negative.

Physical Examination. A dehydrated, well nourished, white male, acutely ill but coherent and rational. The neck was not rigid, there was marked jaundice of the sclerae, the chest and lungs were negative. The heart was normal, there were no murmurs or irregularities in rhythm. The blood pressure was 120 mm. of mercury systolic and 60 mm. diastolic. The abdomen was held rigidly and was quite tender, but no masses were palpated. There was pain and tenderness on pressure over all extremities, the reflexes were normal.

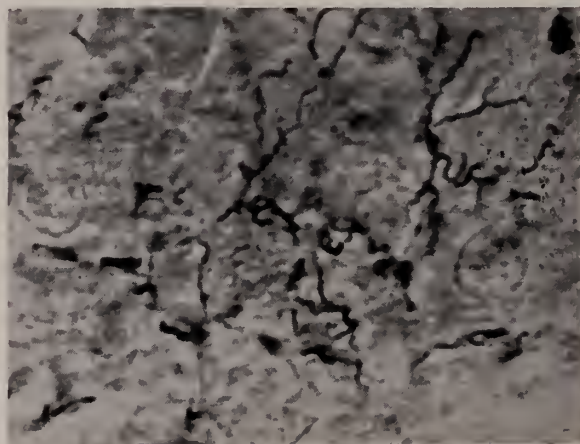


Fig. 1.—Microphotograph from section of guinea pig liver, showing spirochetes, from Case VII.

Laboratory Data. The specific gravity of the urine was 1.020, with 2 plus albumin, negative sugar. It was strongly positive for bile and the microscopic examination was negative. The erythrocyte count was 4,200,000 with a hemoglobin of 88 per cent (Sahli), 8,700 white blood cells, with 77 polymorphonuclear neutrophils, 6 eosinophils, 12 lymphocytes, and 5 monocytes. The prothrombin time was 18 seconds, the mean corpuscular hemoglobin 29.8,

the mean corpuscular volume 100, the mean corpuscular hemoglobin concentration 29.5. The blood sugar was 110 mgms. per 100 cc., the non-protein nitrogen was 78 mgms. per 100 cc., creatinine 3 mgms. per 100 cc., the icteric index was 46. The total cholesterol was 105 mgms., with free cholesterol 67 mgms. and cholesterol esters 38 mgms. per 100 cc. The total serum proteins was 6 grams per 100 cc., with 3.2 grams of albumin and 2.8 grams of globulin. The Wassermann and Kline were negative. The Mosenthal concentration test revealed a variation in specific gravity from 1.011 to 1.017. The hippuric acid test performed orally caused an excretion of 3.5 grams of hippuric acid. The dark-field examination of the urine was negative for spirochetes and the blood culture was also negative. Guinea pig inoculations were performed.

Course in Hospital. The temperature on admission was 105 degrees Fahrenheit. It dropped very rapidly to normal within twenty-four hours and then was intermittent, rising to 103 degrees and returning to normal for the last five days of hospitalization. The pulse and respiration were not unusual. The patient improved very rapidly. The urine gradually was cleared of bile, the hemoglobin rose to 95 per cent, and the white blood count rose to 15,700, but then dropped to normal. The non-protein nitrogen gradually dropped to 39 mgms. per 100 cc., the icteric index rose to 54 units, but finally returned to normal. The total proteins at the time of discharge was 7.8 grams, with 4.2 grams of albumin and 3.6 grams of globulin. The total cholesterol rose to 151 mgms. per 100 cc., with free cholesterol 96 mgms., and cholesterol esters of 105 mgms. per 100 cc. The inoculated guinea pig died fourteen days afterwards and at autopsy the pig was markedly jaundiced. There was congestion with gross hemorrhage in both lungs, the liver and kidneys. Microscopic sections through all structures revealed innumerable spirochetes. The patient was discharged fourteen days after admission and was seen two months later in the outpatient clinic. He seemed to be in normal health at that time.

Comment. Although most of the other cases came from the poorer strata of population, in which living conditions and sanitation facilities were not of the best, this is the only case in which the patient's occupation may have been a factor in the development of this disease. He may have come in contact with rats or sewerage by the handling of junk. This was

the only case in our series in which the guinea pig inoculation was positive.

DISCUSSION

On account of the infrequent number of cases, most of the American literature consists of individual case records, such as the reports of Mulholland and Bray,¹ Jeghers, Houghton, and Foley,² Gaines and Johnson.³ It has been emphasized by these observers that, although severe jaundice is usually present, there is very little evidence of liver damage. In our cases, in which chemical studies of the blood proteins and cholesterol were performed, there again seemed to be very little change suggesting severe liver damage.

We feel that, although there is little anatomical change, there must be a rather severe functional derangement of the liver. The interstitial nephritis is always out of proportion to any other pathological finding and we believe the kidney involvement usually causes the death of the patient. Although there is no definite proof as to the cause of the kidney involvement, the actual presence of spirochetes in kidney tissue, or at least some toxic substance elaborated during the course of the disease, must produce the widespread interstitial involvement.

There has been no accepted treatment for this disease. Gordon and Feldman⁴ suggested the usual supportive treatment for liver damage, such as, intravenous injections of glucose and saline, transfusions, and alkalinization. Tokuyama⁵ advocates the serum treatment as inaugurated by Inado and Ido⁶ in 1922. It is felt that it would be wise to use both serum and supportive treatment in all cases, but the serum is very difficult to obtain. It is possible that we may be able to prepare a serum from some of our cases that have recovered and use this serum when necessary in the future.

There is no reason why we should not be able to recognize spirochetal jaundice more often in the United States. If more health laboratories were able to perform agglutination studies for leptospira it would be very simple to send the blood of a suspected case to these laboratories as we do for other diseases such as typhoid fever. Jeghers et al² state that, in 1933, twelve-hundred specimens of blood from persons suspected of having Weil's disease were examined at the Pasteur Institute of Paris and agglutination with the leptospira was obtained in 23.1 per cent. It seems to us that the clinical diagnosis is very often missed because the observer feels that the

disease is foreign to his locality. The syndrome of an acute febrile state, with generalized aching and tenderness over the body and jaundice, should at least suggest Weil's disease. It is our belief that, if dark-field studies on the urine and blood, with guinea pig inoculations and agglutinations were performed on more cases that have the above syndrome, the disease would be found to be very common in our country as well as abroad.

CONCLUSION

Seven cases of spirochetal jaundice are reported in detail. Five of these cases had complete autopsy studies and the other two cases recovered. It is considered that spirochetal jaundice is easy to diagnose with proper laboratory aid.

NOTE: We wish to thank the Departments of Pathology and Bacteriology for their help in compiling this study.

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THE CLINICAL USE OF HEPARIN FOR THROMBOSIS.*

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Prior to the introduction of heparin for clinical use, the clinician who was confronted with the problem of the treatment of sudden occlusion of a vessel by a thrombus had very few tools at his command. The only method that offered much success was prompt removal of the thrombus from the affected vessel and this was usually followed by prompt recurrence. We now have at our disposal a much improved method of treatment for such conditions. Although the clinical use of heparin in the treatment of thrombosis is still in the experimental stage, several facts have come to light which lead one to believe that we now have an effective means of dealing with the problem of thrombosis.

Most clinicians are aware that stasis in the blood stream plays an important role in the development of a thrombus; injury to a blood vessel, the state of the intima of the blood vessel, the immobile state of the bed-ridden patient, and other factors are important in thrombus formation. The climate appears to be a factor; thrombosis tends to be more prevalent in the colder than in the warmer climates, hence the higher incidence in the northern states and countries than in the South. Certain surgical procedures make

a post-operative thrombus more likely to occur—operations in the pelvic region, upon a blood vessel in the midst of crushed tissues of the lower extremities, splenectomy; age is a factor, thrombosis being much more common among older patients.

CLINICAL REPORTS

The first workers to use heparin clinically in post-operative cases were the Swedish internists, Hedenius and Wilander, who showed that by repeated intravenous injections of heparin they could keep the clotting time well above fifteen minutes for at least fifteen hours. Their report was followed by that of Murray and Best, who stated that they had used the drug in 315 cases (in a later article, 440 cases) and had noted no signs of embolus or thrombo-phlebitis where heparin was used. These were specially selected cases from a group in which a definitely high incidence of pulmonary embolus and thrombo-phlebitis had been noted before heparin was introduced into the post-operative treatment regime. Crafoord, in Sweden, has reported on 117 cases in which heparin was given. In these 117 cases only four patients developed a thrombus and in each of these four patients the treatment had been stopped for some reason or other. In a control group of equal number, no heparin was given; Crafoord noted

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slight signs of thrombosis in thirty-three cases and definite thrombosis in twenty cases. It will be seen from the papers mentioned above that heparin seems to have a definite effect in lowering the incidence of thrombosis and embolism in post-operative cases.

As to the results of the use of heparin post-operatively in splenectomy cases, the work of Murray and McKenzie should be noted. These workers showed that in dogs, if the splenic vein was severely crushed during splenectomy before ligation and removal of the spleen, seven out of nine non-heparinized dogs operated ten days later showed definite thrombosis of the splenic vein. In eight other dogs in which continuous heparinization was carried out for three to four days after splenectomy, these animals when operated on later showed the splenic vein to be patent. In eight human cases of splenectomy, heparin was given post-operatively. In no case was any symptoms or sign of thrombosis of the portal system noted.

When the central vein of the retina becomes thrombosed, about 95 per cent of such patients show total and permanent blindness in the affected eye. Ploman has now reported on nine patients in which heparin was used after sudden occlusion of the central vein of the retina of one eye by a thrombus. In five of these patients good vision finally re-developed in the affected eye when heparin was given for from six to ten days after the thrombosis occurred. In three cases no improvement was noted.

The writer has recently seen two cases of cavernous sinus thrombosis treated at the Massachusetts General Hospital. These patients were given continuous heparin infusions intravenously (with sulfathiazole) very shortly after the thrombosis occurred. The outcome was good in each case, a fair amount of vision returning, with only ocular palsy remaining. These are the first cases of cavernous sinus thrombosis which have survived, to my knowledge.

There have been no reports of any value on the clinical use of heparin in coronary thrombosis but the experimental work of Best and Solandt holds out what may be a ray of hope. It is too early as yet to know what we may expect from the further use of heparin in this condition. Best and Solandt injected sodium ricinoleate, a sclerosing solution, into either the main trunk or the left branch of the coronary artery in dogs under nembutal anesthesia. In thirteen control dogs in which no heparin was used,

twelve developed definite myocardial degeneration and eleven of the thirteen showed definite coronary thrombosis. In twelve dogs in which continuous heparinization was carried out for forty-five days after the coronary arteries were injected with the sclerosing solution, only one dog showed any sign of myocardial degeneration.

Several reports have appeared on the use of heparin and sulfapyridine in the treatment of subacute bacterial endocarditis. The results have not been encouraging and several deaths from cerebral accidents have been observed during the heparin treatment. Since the mortality in this condition is almost 100 per cent, it is justifiable that this plan of treatment be further investigated in the hope that the mortality may be reduced, but it is likely that this treatment will not afford much success in reducing the high mortality of this condition.

METHODS OF ADMINISTRATION OF HEPARIN

Several methods have been developed for the administration of heparin. There are essentially only two methods that are useful in treating hospital patients. First, the Swedish clinicians have given up the administration of heparin by the continuous intravenous drip method and are now resorting to the injection of heparin solutions every two or three hours, keeping up the injections for from four to six days. Crafoord treats most of his cases in this way, giving about 50 mgms. of heparin (approximately 5,000 units) every two hours, for four to five days post-operatively. By this method the clotting time is raised quickly from a normal of four to five minutes to from fifteen to twenty-eight minutes. Two hours after the injection the clotting time has usually returned to normal. It will be understood that there will be a great variation in the clotting time of patients treated in this way. It would appear that if it is decided to treat a patient with heparin it would be well to keep his clotting time at around twenty minutes for most of the time rather than for only short periods after each injection. Nevertheless, by this method Crafoord has been able to effectively lower the post-operative thrombosis complication in his patients.

The following method of administration of heparin is the one used by most clinicians in this country and in Canada. Heparin solution is obtained from the Connaught Laboratories, University of Toronto, Toronto, Canada, in 10 cc. vials. Each cc. contains

approximately 1,000 units of purified heparin. The contents of a 10 cc. vial are mixed with 1 liter of either sterile normal saline or 5 per cent glucose in saline; if one wishes, a less dilute solution may be used, e.g., in the treatment of patients in whom cardiac decompensation is feared. Just before the continuous administration of this heparin solution is begun the patient is given 5 cc. of the undiluted heparin solution, i.e., about 5,000 units, intravenously. This amount of heparin will quickly raise the clotting time from a normal of four to five minutes to fifteen to twenty minutes. If this initial injection is not given, one may find that it will take hours before the clotting time is raised much above normal. Then the diluted heparin solution is given to the patient by constant intravenous drip at from fifteen to twenty-five drops per minute. One will usually find that the patients will require from 1,000 to 1,500 units per hour during the first or second day of treatment, after which the requirement may be only 500 to 1,000 units per hour. About the fourth day of such treatment it will usually be noted that the requirement for heparin is less. Most workers tend to use the arm vein for the constant intravenous drip but several patients have mentioned to the writer that they were much more comfortable when the intravenous injections were given in the foot rather than in the arm vein.

The clotting time is best determined by the Lee-White method. It is essential that small tubes be used with this method and that at least three tubes be used for each determination. Venous blood is drawn and 1 to 2 cc. placed in each of these small tubes. Every thirty seconds to one minute the first tube is inverted to note if clotting is occurring. When clotting is taking place in the first tube the second tube is inverted and when it is beginning to clot, the third tube is inverted in like manner and inverted every thirty seconds until clotting has occurred. The clotting time is taken to be that found for the third tube. It is essential that these tubes be clean and kept at room temperature. This method gives much more accurate results than the capillary tube method. The clotting time should be checked at least three times daily so that if not enough (or too much) heparin is being given, the rate of administration can be changed. In general it is best to keep the clotting time of a heparinized patient at about twenty to thirty minutes. It will be

found that after such a clotting time is reached the administration of only slightly larger amounts of heparin will markedly raise the clotting time, just as will slightly smaller amounts lower the clotting time. One of the great difficulties in the treatment is maintaining an even level of the clotting time. This is especially true during the first day of treatment. The services of an attendant are needed to constantly supervise the flow of the heparin solution.

If it is desired, sulfanilimide or sulfapyridine therapy can be carried on while the patient is under heparin treatment and this does not seem to change the clotting times. One can give, if necessary, intravenous sulfapyridine in one vein while the patient is receiving heparin solution in another vein.

Several points of interest come up for consideration. It must be remembered that patients with staphylococcus infections, especially those with bacteremia, tend to form thrombi even during heparin administration. The writer has seen recently two such cases of a second pulmonary embolus forming during the course of adequate heparin treatment for the first pulmonary embolus. In both of these cases the patients had a much milder course following the second embolus than after the first. Sometimes it appears that even with the heparin treatment, the patient with a pulmonary embolus is just able to make the grade, i.e., he may do fairly well but when heparin is stopped he seems to do poorly, to improve again when the heparin is restarted. It would appear here that heparin is preventing further deposition of platelets distally in the affected vessel and thus keeping the collaterals open.

Some may ask whether heparin should be given prior to an operation rather than waiting until several hours have elapsed following the operation. Crafoord has concluded that it is best not to give heparin before or during an operation because he has noted the formation of a small hematoma in the operative site when heparin had been given during the operation. He prefers to let two or three hours elapse after an operation before starting heparin. This is likewise the view taken by the Toronto investigators, Murray and Best. Heparin should probably not be given to a patient with a prolonged clotting time or to one who has any peculiar bleeding tendencies. Heparin should be discontinued if during the intravenous administration fever, chills, headache or weakness is

noted. These side effects have been observed even with the highly purified preparation. Care should be taken to note any allergic response to heparin. In treating patients with subacute bacterial endocarditis with heparin and sulfapyridine it should be explained to the family that there is a definite danger of intracerebral bleeding in such patients. The writer has now heard of seven such cases. If bleeding phenomena should be noted during heparin treatment it would be well to stop the heparin immediately. This has been noted in several cases and severe bleeding from the bowel was noted by Dr. I. A. Bigger. Heparin was stopped and the bleeding ceased shortly after. In the heparinized patient one can bring the clotting time back to normal within two or three minutes by the intravenous injection of either protamine insulin or a 2 per cent solution of salmine. Salmine may be procured from Merck & Company and made up freshly in a 2 per cent solution. Only a few mgms. of either drug will be needed to bring the clotting time to normal. If protamine insulin is used, it must be covered by enough glucose, either by vein or mouth, to insure that the blood sugar will not be lowered.

When heparin is used following an operation upon a blood vessel or for a heart wound, it is imperative that the heparin be started immediately. In fact, it is well to place some of the heparin solution directly into the blood vessel at its suture line. If the heparin in these cases is not started immediately, thrombosis may take place in the affected vessel.

While the patient is being kept in bed and heparin is being given by the constant intravenous method, it is well to see that the patient moves about freely in bed to promote better drainage, especially of the lower limbs. The nurse or attendant should exercise the limbs by moving them about as in passive exercises. This is most important for the lower limbs, and the exercises should be carried out several times each day.

Some may wonder as to how long the heparin therapy should be kept up, once it is started. In the treatment of pulmonary embolus it is perhaps well to

continue the heparin for from ten to fourteen days. Most surgeons usually continue the treatment for from four to six days following an operation in which thrombosis is feared. In post-splenectomy cases it would be wise to continue the heparin treatment for as long as there is a marked elevation of the platelet count, and this usually lasts for from ten to sixteen days; the platelets in some cases may rise to above one million and thrombosis is very common.

As to the cost of treatment: if Crafoord's doses were used the cost would be around \$25 a day. With the method outlined above, the cost might run from \$3.00 to \$10.00 a day. It will be seen that heparin therapy is still a somewhat costly procedure, though life-saving in many instances.

A useful bibliography is appended.

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This subject is particularly well presented in its entirety, both as to fundamentals and clinical usage in the very recent book: Heparin, by J. Erik Jorpes, Oxford University Press, London, 1939. This book is available in the Medical College of Virginia Library.

REMEMBRANCES—PERSONAL AND OTHERWISE.*

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Vinton, Virginia.

One evening in the early fall of 1883, a number of young men, who had arrived in Richmond preparatory to entering upon the study of medicine, assembled with many citizens of Richmond in the lecture room of the Egyptian Building, and heard addresses from members of the faculty. The statement was made that the class of that year was the largest since the time on the eve of the War Between the States, when Hunter McGuire had brought from a northern medical college more than one hundred Southern boys who matriculated at the Medical College of Virginia. Among the members of the faculty that year was the distinguished Doctor Robert T. Coleman, a gentleman of culture, and a gifted teacher. After occupying the chair of obstetrics through several months, his health failed, and he gradually went down "through the valley of the shadow of death." His passing cast a gloom over the faculty and the student body.

Hanging on the wall of my office is a diploma worded in classic Latin, containing the signatures of the eight members of the faculty who taught throughout the session ending April 2, 1885. The fifty-five years have almost obliterated the signatures. A few words about these stalwart men may not be amiss.

Martin L. James, Dean, and Professor of the Practice of Medicine, a gentleman of excellent parts, who took deep interest in the students, and was friendly to every one of us.

John S. Wellford, of middle age, who discussed in a forceful way the diseases of women and children, before the germ theory of disease had been universally accepted. However, he had evidently received a dim light on the subject, because he taught that diphtheria was not, as many believed, a *local*, but a "constitutional disease."

J. S. Dorsey Cullen, son of Doctor John Cullen, the brilliant Irishman, who was a founder of the college and first professor of the practice of medicine. Doctor Dorsey Cullen, our professor of surgery, was a fluent speaker, and a man of pleasing personality. He had had large experience as a surgeon in the Confederate Army, was alert, and knew when to cut, how

to cut, and when not to cut. It was said of him, "His commanding presence continued to give prestige to the department of surgery 'til his death in 1893."

John Nottingham Upshur, the son of Doctor George L. Upshur, the faithful physician, who remained at his post in his home town of Norfolk during the summer of 1855, when that city was visited by the dreadful scourge of yellow fever, and who unfortunately contracted the disease and died during the epidemic.

This son of the heroic father had been a student at the Virginia Military Institute, and went with that group of patriotic youths who fought the bloody battle of New Market, of which he was too modest to speak. He lectured on materia medica and therapeutics, wrote and published numerous theses on medical subjects, and served a term as president of the Medical Society of Virginia.

George Ben Johnston occupied the chair of anatomy in 1883-1884, and, later, that of surgery. He was a man of fine appearance, brainy, witty, genial, and very much admired by both the laity and the profession. His surgical skill brought him a large and lucrative practice in, and far beyond the confines of the city of Richmond. He performed the first two nephrectomies reported in Virginia, in 1899. (From *Medicine in Virginia in the Nineteenth Century*.)

H. H. Levy, a clean and scholarly man, well versed in physiology and pathology, which he taught in an impressive manner.

William H. Taylor, Assistant Surgeon in the Confederate Army, was known as "the sage of Grace Street." He was professor of chemistry, toxicology, and medical jurisprudence, and was recognized far and wide for his profound knowledge of those sciences.

He filled the office of coroner of Richmond for forty-four years, and held inquests over 10,000 bodies. He was often called to the various places in this State to make analyses of the stomach contents of persons suspected of having died from the effects of poison. When on the witness stand, lawyers who had never met him sometimes tried to entrap and embarrass him, but his unique answers to their questions brought to court visitors laughter of ridicule

*Address before Roanoke Alumni of the Medical College of Virginia, May 21, 1940.

that put a quietus to the blustering attorneys. He was myopic, and used a large magnifying glass. You have heard the answer he gave when a lawyer asked him in sarcastic voice, how far he could see, when he replied "ninety-seven million miles" and added, "I can see the sun."

Christopher Tompkins, well versed in anatomy and obstetrics, both of which he taught very thoroughly. He was a modest gentleman, deeply interested in his work, respected by all his brother physicians, upright and ethical, honored by his students, and loved by his patients.

Doctor James Brown McCaw had served as professor of chemistry and other subjects over a period of twenty-five years. Through the sessions of 1883-1884, he lectured in a wise and fascinating way on the practice of medicine. He had been a surgeon in the Confederate Army, and under his guidance the Chimborazo Hospital was planned and erected. It was the largest Military Hospital that functioned during the war, and probably the most sanitary. The sick and wounded soldiers treated there between the years 1861 and 1865, numbered 77,000, and the fatalities were 7,000. At the close of the session of 1884, Dr. McCaw, to our regret, resigned from his professorship.

At the end of the session of 1884, one of the graduates, "Dan" Coleman, aged eighteen years, of small stature, and weighing less than a hundred pounds, received a prize for excellent progress in his studies. The presentation speech was made by Dr. McCaw, tall, handsome, and the personification of grace and dignity. He looked down at the little lad, and began his address—"Doctor"—then paused a moment while the audience rang with laughter and applause at the striking contrast; then proceeded with a complimentary and eloquent address.

Doctor Daniel Coleman practiced his profession with excellent success in the city of his birth, and was a teacher at the College for a number of years.

I received my diploma from the Medical College of Virginia on the stage of the historic old Richmond Theatre, April 2, 1885, two days before my birthday. On the morning of that memorable day, Dirk A. Kuyk, who had been my room mate through the session, went with me down below the city on the James, secured a row boat, and engaged in the sport of fishing until mid-afternoon. We had been very busy studying in preparation for the approaching

final examinations. The day was clear and balmy, the water calm and inviting. At one o'clock, we ate our big luncheon, and enjoyed it as we had not relished a meal for a long time. We had a pleasant walk from 408 North Twelfth Street, where we had resided, studied and enjoyed the friendship of the interesting family of Mr. W. C. Adams, through the previous six months.

The delightful rowing, the thrill of catching fish with hook and line on the gently flowing historic James, I recall with pleasure. Among the poems of the gifted and beloved Cally Ryland, there is this bit of verse, entitled,

GOIN' A-FISHIN'.

I'se gwinter take a day off en go fishin',
A-fishin' fer de cat fish en de chub,
I'se tihed ov settin' here en wishin', wishin',
I's tihed ov wuckin' hard to buy mah grub.

I wants ter get out whar de sun is soakin',
En' whar de water laps aroun' mah feet,
En' whar no body hollers if I'se smokin',
En' keers ef I'se dirty er I'se neat.

That night an audience of cultured men and women honored the class with their presence.

A few weeks after receiving our diplomas, Dr. Kuyk and I appeared before the State Medical Examining Board at its first meeting. We were both given certificates that permitted us to apply for license to enter upon the practice of medicine. Dr. Kuyk confined his work to diseases of the eye, ear and throat, and was very successful in the specialty. Later he studied in hospitals on the European continent.

One afternoon, early in the month of May, 1885, I landed in the lunatic asylum at Williamsburg—where I had been given the position of intern. It was the oldest institution of its kind on the American continent, having been established in 1773. On one occasion, shortly after my arrival in that city, two little girls in the company of a young lady friend of mine looked at me in a rather uneasy and quizzical manner, and one of them asked the lady in a low voice, "Is he a patient?" Children are usually close observers, and often correct in their views concerning the qualities of people. To be taken for a crazy young man, in the incipient stage of my profession, was rather distressing.

After leaving the Eastern State Hospital, I went up to Palmyra, the county seat of Fluvanna, and began the practice of medicine. My first minor operation

was the reduction of a prolapsed lower bowel, the patient being a small negro child. I soon learned that country doctors were expected to practice on dumb animals, such as cows, horses, sheep, dogs, and hogs. A motherly old lady invited me to her house one morning, and said, "Nobody is sick in my family, and I am almost ashamed to say why I sent for you. My cow is in a dreadful fix, and if you will relieve her, I will pay you five dollars." Going to the stable, I discovered that the animal had suffered a complete prolapse of the uterus. The organ was covered with debris from the stall. After using soap and warm water plentifully, I manipulated the organ, and returned it to its proper anatomical region, and to my great surprise, she had an "uninterrupted recovery." I wondered why she did not die of puerperal septicaemia. Perhaps that disease does not attack the bovine tribe. The fee was paid, and the owner expressed high appreciation for the restoration of her good family milch cow.

Shortly after I reached Palmyra, a local painter prepared an attractive sign, swung it high above the heads of passing pedestrians and equestrians, where it waved and rattled in the breezes, laden with the aroma of Fluvanna persimmons. A young prospective father saw it, and when the time arrived for the birth for which he had been looking, he sent for me. After many hours had passed, and I had worked vigorously, doing much that was not necessary, I became uneasy and sent in haste for the old doctor, who came and said, "Everything seems to be all right." It was true. Then the brisk winds continued to blow, to shake and rattle the sign over the road by the hotel, but it brought not another call to a parturient during my stay in the community.

In the autumn of 1883, from the town of West Point, where the Pamunkey and the Mattaponi unite to form the historic York, a young man of attractive personality, went up to the City of Richmond, and entered as a student at the Medical College of Virginia. Two years later, he graduated. Then he left the low grounds of the Virginia Peninsula and journeyed to the top of the Alleghany Mountains, where for several decades he practiced his profession. Later he moved with his interesting family to Roanoke, where he still resides. Let us congratulate this worthy member of our local Alumni on the fact that no other graduate of the Medical College of Virginia, in all its history of 100 years, has become the father of

five boys, all of whom secured diplomas from that institution. Like Abou Ben Adhem, he will be remembered as "one who loved his fellow men." He is Doctor J. Gibson Davis. "May his tribe increase!"

While practicing in York County, the son of a prominent farmer consulted me about the condition of his father. I prescribed hydrochloric acid in fifteen drop doses, well diluted. Some days later, I met the old gentleman. He said, "That medicine you sent me like to have killed me. It took the lining off of my throat." I asked, "How much did you take at a dose?" He answered, "A teaspoonful." "In how much water?" His reply was "None. I took it *reverent*." But he added, to my comfort, "It sure did help my stomach trouble."

In the case of a pneumonia patient, there were two small bottles of the same size and color on a table; one containing a mild sedative, marked "Dose, one teaspoonful," the other, "Tincture of Aconite, Dose, one drop." The son-in-law of the delirious man was told to give him a dose of the sedative. He was about to give a teaspoonful of the aconite, when I looked at the label and stopped him in time to prevent a tragedy.

In a cottage by the railroad, a venerable father in Vinton, with many descendants and a double hernia, called me early one evening to replace his prolapsed bowel. I had succeeded in reducing the hernia on several prior occasions, but this time it seemed I would not be able to relieve him. He was given a hypodermic of morphine and atropine, and an ice-bag applied over the swelling. Half an hour later, further efforts at reduction failed completely. By this time, excitement was running high among his numerous children, grandchildren, and great grandchildren, who stood with faces anxious and grave. The wife who had shared the old man's joys and sorrows for more than sixty years, wrung her hands in anguish and cried audibly, when told he must have his belly cut open or die. A surgeon was called; kettles on the cook stove in the kitchen, containing water to sterilize the instruments, sang a weird monotone.

When the surgeon arrived, I requested him to observe the critical condition of the patient, and the urgent need of the operation. He turned back the cover, placed his hand on the swelling, made gentle pressure, when lo, the thing growled ominously, as if angered and frightened by the surgeon's touch, and

sneaked back like a coward to rejoin its friends in the abdominal cavity.

A strange and startled look came over the patient's face. First, an expression of wonder, then one of joy and gratitude. He reached out his hand, gave the surgeon's back an affectionate pat, and said with emphasis, "You are the boy for me." Everybody in that room was smiling and happy, though I must confess I was somewhat embarrassed.

Many of the diseases affecting the people during the past half century have been modified, and some of them conquered.

Diphtheria was thought to be a local disease. We did not know that typhoid fever came from eating and drinking food and water laden with specific germs; and that puerperal fever was carried to patients by the unclean hands and instruments of physicians.

Almost every person who acquired tuberculosis, gradually grew weaker, wasted away and died.

There was no law made and enforced to vaccinate the people for smallpox, and outbreaks of the disease were common. The average doctor could not diagnose hook worms; and deaths from diphtheria among young people continued until the discovery of antitoxin. The treatment for lumbricoids and tapeworms used to pay us well, but now those parasites have nearly ceased their destructive work in this part of the world.

Health conditions were deplorable in cities, towns, and rural communities. No official boards of health had been organized. Finally, members of the Legislature were induced to appropriate the insignificant sum of \$5,000 to be used yearly for health purposes over the entire State. Then it was that God raised up a man to go out and labor for the cause. He was Ennion Williams, who served for some years—until his untimely death—as State Health Commissioner.

In September, 1898, I was present when the State Medical Society met at Virginia Beach. Doctor E. C. Levy read a paper entitled, "Do Bacteria Cause Disease." He proved that they certainly do, but the scholarly men of advanced age did not believe it, and in loud language declared the ideas expressed by the young doctor could not be accepted as true. Think of it! And it happened late in the nineteenth century! At that time, the number of typhoid fever cases was legion. I, myself, was treating from forty to sixty cases every year. I traveled mostly by buggy

and on horseback, in the towns of Vinton and Roanoke, over level land and mountains, through Bedford, Botetourt, Bonsack and Ballahack, was hot and thirsty, but drank no water from rural springs or wells, and though I treated probably more than five hundred cases, I was fortunate enough not to acquire the disease.

Few, if any of you, remember when an instrument called the "oxidonor" figured prominently in this community, some thirty-five years ago. It was made from a red cord, several feet long, a cuff with a buckle attached to one end, and a lump of shiny metal to the other. It was a real pretty thing. The patient buckled the cuff around his ankle and dropped the metal end into a vessel of ice water, went to bed, where he remained from one hour to several days. The cost of making the thing must have been not more than fifty cents, but I think it sold for \$15.00, probably more. Testifying to its marvelous curative powers, published in a booklet, were Methodist stewards, Baptist deacons, lawyers, merchants, and poor folks. One man, whose son I treated for typhoid fever, sent his little piece to the booklet of testimonials, in which he stated that he treated himself with it for typhoid fever, and it cured him much quicker than the treatment the doctor gave his boy. After selling it for years, the law made an investigation; pronounced it a fake; and stopped its sale. What a pity that other fakes, so expensive and dangerous, continue to be used.

A good while ago the question of putting sewage plants in cities and towns began to be considered, and those towns using them were found to be almost free from typhoid fever and some other distressing and dangerous diseases.

A few of us felt that it would benefit the town of Vinton to have such a plant. A meeting was called, at which a bond issue for \$50,000 for putting in a sewage system was discussed. All seemed to favor the project. At the second meeting several weeks later, several citizens opposed the project. Speeches were made for and against the measure. I saw in the faces of many of the assembly, a determination to turn the matter down, and, before putting the vote, urged them to act in its favor. "If you do not, this dangerous disease will stay with us, and kill some of you, and, knowing you as well as I do, I think I am telling the truth when I say, you will go to Hell!" They decided to hold the election, and the

measure was adopted by a very small majority, and the plant installed. Now there has been no typhoid fever contracted in the town for many years.

Perhaps all of us have heard this remark, "The doctor gave him a hypodermic and it killed him."

Case 1.—An old man propped up in bed, in the last stage of consumption, gasping for breath, his lips and finger nails purple, said in a whisper, "Give me something to hurry me on." A harmless hypodermic was administered, which was explained to the son. He lived just a few hours.

Case 2.—Midnight death from consumption hovering over a young married man. His wife said, "Doctor, won't you please give him a dose like you gave Mr. Blank, and let him pass out quickly?"

My friend, J. Gibson Davis remembers when doctors spoke of "*laudable pus*", sponges, products of dead animal material, used to control bleeding during operations. We heard them speak of *leeches*, *setons*, and other contrivances that are not employed in the healing art at this time. Some bled their typhoid and pneumonia patients; others applied cantharides plasters over distended tympanitic abdomens, and gave water in homeopathic doses.

Dentistry had not been taught in the College at Richmond. We came away taking our Medical diplomas with no more knowledge of the art of tooth extraction than the veriest clod hopper. I do not know how many teeth I broke off, leaving the roots to be pulled out by dentists.

Trained nurses had not appeared on the scene. Now they are a necessity and we just can't do without them. There is no doubt in my mind that they have helped us to save lives.

There are people who still believe health is endangered by inhaling *night air*.

One damp and dense foggy night, on the Virginia coast, a peculiar looking individual rode into the yard of the home of a doctor. He wanted the physician to visit his son, who, after shaking with a malarial chill, had become very hot; his temperature having risen to 106° F. The rider held over his head a commodious umbrella to protect himself from the damp atmosphere. His head and face were covered with a thick veil, through the meshes of which he thought the night air lost its harmful constituents; his hands and wrists were covered with gauntlets, and his neck enveloped in a wide bandage. Thus his entire external integument was protected from the

entrance of the disease germs floating in the midnight miasmatic air. That comic Knight Errant did a wise thing, but he was not aware of it. He was armed against the stabbings of the vicious droves of anopheles mosquitoes that frequented the community, but he feared no danger of anything except the night air.

Householders had commenced to prevent the entrance of the night air into their abodes by plugging crevices and keyholes. They did not know that if a patient with tuberculosis had been lying in the stagnant, contaminated atmosphere, the other occupants of the apartment would become affected with that fearful, fatal malady. Believers in the evil effects of night air still dwell in the high lands, as well as those down in the coastal plains.

The delightful breezes of the mountains of Virginia, through twenty-four hours of every day, are not only soothing to tired and tense nerves, but have a marvelous curative value.

My second case of obstetrics may interest some of the older men who entered the profession before antiseptic measures were employed.

While young and with little experience in the management of obstetrical cases, I met at the midnight hour a young wife in the throes of puerperal convulsions; wrestled with the fierce attacks occurring at two hour intervals, till the coming of the morning light, when her baby girl was born. Then I hoped for improvement in her condition, but the seizures continued with even greater force. At the dawn of the second morning, after I had given what I had been taught was an unsafe drug, morphine, the paroxysms ceased, and the patient fell into a quiet sleep, from which she awoke five hours later. Much to my relief and joy, she was conscious, and she gradually regained her health.

During the War Between the States, a disease broke out among the Federal troops, operating in the vicinity of the swamp adjoining the Chickahominy river. It was thought to be a hybrid disease. Dr. Woodward, a surgeon attached to the Army of the North, is reported to have given it the name of typho-malarial fever. By this name it was known for many years.

At the meeting of the Medical Society of Virginia, held at Rockbridge Alum Springs, in 1896, the condition was discussed in a forceful manner by Dr. W. S. Gordon. He argued that the name under

which it had been known for nearly half a century was a misnomer; that the germs of two diseases working in the same body simultaneously, are not kindred spirits, but each is trying in its own way to damage and destroy the body of the unfortunate individual. Dr. Gordon closed his thesis with the remark: "It is thoroughly illogical to conclude that there is such a disease until the necessary conditions for its existence have been demonstrated." Doctors J. Allison Hodges, J. E. Warinner, W. L. Robinson, J. N. Upshur, and J. S. Wellford, in discussing the subject, favored the term "typho-malarial fever." Dr. Warinner stated that the disease was recognized in the swamps of the Chickahominy by physicians long before Dr. Woodward borrowed the term for which he received the credit of introducing into medical nomenclature. Soon after that meeting, the term "typho-malaria" ceased to appear.

Dr. Junius Ernest Warinner, mentioned above, and I were boys together. We visited each other at our respective homes, several miles apart, played in the fields and forests, swam and angled for cat fish, chubs, perch and pike, in the mill pond and streams. Our friendship continued through our growing periods. He graduated from the Medical College one year before I received my diploma, after which our visits became infrequent. He practiced in his home county of Henrico, and became a very efficient and beloved doctor. He filled the position as a member of the Medical Examining Board of Virginia for a number of years, and, in the meridian of a life of usefulness, passed away from earth to his God, whom he had faithfully served. His remains are sleeping in the cemetery of Emmanuel Episcopal Church at Brook Hill.

"Green be the turf above thee,
Friend of my youthful days,
None knew thee, but to love thee,
Nor named thee but to praise."

I would add a brief tribute to the memory of two other young physicians who figured prominently in the City of Richmond during the closing decade of the nineteenth Century.

Dr. Charles M. Shields, who, after graduating in 1883, was selected to lecture at the College on diseases of the eye, ear and throat, subjects that he had chosen as his specialty. Later, he was elected a member of the faculty and became adept in the art of imparting knowledge of that interesting study to the members of his classes. His untimely death brought sorrow to his large circle of friends.

Dr. Lewis Crenshaw Boshier, a native of Richmond, Virginia, born in 1860, received his academic education at Richmond College, and graduated from the Medical College of Virginia at the commencement in the spring of 1883. He was frequently called on to lecture in the absence of members of the faculty when they were unavoidably absent, and he substituted in a most efficient and satisfactory manner. Later he became professor of the chair of surgery, and, possessing a comprehensive knowledge of anatomy, was prepared to teach and practice surgery in a forceful manner. He was already attaining fame in the surgical field when called away to lie down and die. That fine, cultured, highly honored, generous, and benevolent Christian doctor, entered into eternal rest before he had attained to middle life.

One word more. To the younger members of the Alumni chapter: The magnificent and imposing structures erected on the campus during the recent decades you hail with enthusiasm; but to us who knew and loved the charming Egyptian building more than fifty years ago, threatened by fire, storms and "grim visaged war", we lift our hats in tender reverence. Its calm and impressive dignity, its classic architecture, the remembrances of its strong outlines, and its ivy covered walls, will always be to us "A thing of beauty and a joy forever".

CIRCULATORY AND RESPIRATORY DISTURBANCES OF THE ERECT POSTURE.

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and

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The decrease in arterial alveolar CO_2 tension on assuming the erect posture, has been attributed to several causes. In a recent thorough investigation of this phenomenon, Hitchcock and Ferguson¹ criticize the suggestion of Main² that this diminution of CO_2 tension is due to pulmonary over-ventilation with resulting alkalemia. These investigators¹ showed that, contrary to the usual statements in the literature, the total pulmonary ventilation of some subjects may be unchanged or actually diminished during the *early* part of standing. They apparently believe that this diminution, or absence of an increase, of pulmonary ventilation on standing, refutes the possibility of the lowered alveolar CO_2 being due to over-ventilation of the blood. They state that the low alveolar CO_2 level is maintained by an impairment of CO_2 transport from the dependent parts of the body, due to stagnation of blood. We cannot agree with this interpretation. The CO_2 tension of arterial blood is regulated by the respiratory center. If the volume of CO_2 in the blood returning to the lungs is diminished, as by retention of blood in the legs, the respiratory center will be stimulated less, and pulmonary ventilation will be decreased until just sufficient to maintain the normal CO_2 tension to the center. Apparently, in the early part of standing even a diminished pulmonary ventilation may be adequate to over-ventilate the diminished circulating blood volume. That over-ventilation must exist, we consider proven by the fact that the arterial alveolar CO_2 tension, and therefore the arterial CO_2 tension, is diminished, in the absence of an acidemia.

An argument against the explanation of impaired CO_2 transport lowering alveolar CO_2 , is that in a person standing, bent over at the waist at right angles, the alveolar CO_2 rises to the lying value.² However, undoubtedly there is still stagnation of the blood in the legs with impaired CO_2 transport.

The cause of this over-ventilation of the diminished circulating blood through the lungs therefore still remains unsolved. Turner³ suggested that the

lowered CO_2 tension is due to cerebral ischemia. Proof that a relative ischemia of the brain on standing occurs is indicated by the diminished jugular return and its lower O_2 saturation.⁴ Main⁵ suggested, however, that over-ventilation might occur because of the fact that the pressure in the carotid sinus is diminished by about 20 mm. Hg. on standing.⁴ This drop in blood pressure in that area should cause a stimulation of respiration. Consequently, we decided to put this hypothesis to the test by raising the blood pressure of a standing subject, by the administration of vasopressor drugs. The resulting increase in carotid sinus pressure should therefore remove this postulated stimulus to respiration, allowing the CO_2 tension to return to the normal lying value.

We therefore used epinephrine and amphetamine sulfate subcutaneously, to raise the blood pressure of standing subjects about 20 mm. Hg. This should then remove this postulated respiratory stimulus by increasing the pressure in the carotid sinus to normal. However, as will be reported in detail elsewhere,* these drugs, in the doses used, had no effect on the alveolar CO_2 tension in either the lying or standing position. Consequently, it would appear that the cause of the over-ventilation of standing is not due to the diminished pressure in the carotid sinus, but may be due to a relative cerebral ischemia.

The criticism by Hitchcock and Ferguson¹ of the suggestion that proprioceptive stimulation might also play some part in explaining the drop in CO_2 on standing,² we consider well based, for, following injection of epinephrine, marked coarse tremors often occur in the arms and legs of the subject. This would be expected to increase proprioceptive stimulation if such existed. However, no correlation of alveolar CO_2 with the tremors was found.

The suggestion of Hitchcock and Ferguson¹ that the increase in functional residual air of the lungs

*Main, R.: Proc. Soc. Exp. Biol. Med., 45: 776, 1940.

on standing may be concerned with the immediate drop in CO_2 , to us seems of negligible importance. In fact, they admit that this effect would be only temporary. If the alveolar CO_2 be thereby suddenly diluted by the addition of a few hundred cc. of air, this over-ventilated blood passing to the respiratory center would immediately slow respiration until equilibrium once more occurred. Again, the increase in residual air in emphysema increases rather than decreases alveolar CO_2 tension.

By a logical chain of reasoning, Hitchcock and Ferguson¹ suggest that there must be an increase in the circulatory velocity of the blood of the arms and thorax on standing. If the velocity is increased, this may explain the increased pH of the venous blood of the arms on standing,² which was attributed to the diminished CO_2 tension of the arterial blood. In order to investigate this point, it was necessary to determine the pH of arterial blood in both supine and erect postures. We soon found that a radial artery puncture when standing was difficult and that subjects readily fainted during a femoral arterial puncture in the erect position, even though procaine had been infiltrated and they claimed to feel no pain. Because of the marked circulatory disturbances produced even by an incipient vaso-vagal syndrome, we abandoned this method in favor of arterializing the venous blood of the antecubital vein by immersing the subject's arm up to the elbow in water of 45° to 47° C. The pH was determined with a glass electrode, care being taken to prevent loss of gases. The skin was always infiltrated with procaine without epinephrine. The femoral artery was first tapped with the subject lying in order to compare its pH value with the arterialized venous blood of the arm. The slightly greater alkalemia of the arterialized blood was probably due to the respiratory stimulation produced by the effect of the hot water. The arm was immersed in hot water for three minutes before a venous sample was taken, and kept there during withdrawal of the blood. Any effect upon respiration or circulation should be constant in both lying and erect positions. A few minutes later, the subject stood for five minutes, and again immersed his arm in hot water for three minutes before taking the final sample from the arm vein. As Table 1 indicates, there is a tendency towards alkalemia in the arterialized venous blood of the arm, on standing. This apparently indicates that on standing an arterial alkalemia does exist, and that the venous

alkalemia in the arms on standing previously reported² is due, at least in part, to this arterial alkalemia.

TABLE 1

Subject	pH—LYING		pH—	pH—	DIFFERENCE
	STANDING		STANDING	STANDING	
	Femoral artery	Arterialized venous (arm)	Arterialized venous (arm)	Arterialized venous (arm)	
Ki	7.42	7.44	7.45	7.45	+ .01
Co	7.42	7.43	7.46	7.46	+ .03
Cr	---	7.53	7.56	7.56	+ .03
Od	7.54	7.56	7.57	7.57	+ .01
Jo	7.58	7.59	7.61	7.61	+ .02

We do not consider that the postulated increased circulatory velocity in the arms and thorax on standing¹ could affect arterial CO_2 tension unless there is also improvement of the circulation to the head. However, in order to test this suggestion, the circulation time of several subjects was determined with 20 per cent calcium glucono-galacto-gluconate (Sandoz) between the antecubital vein and the throat, standing and lying. Since 5 cc. of this solution must be injected, and because the end point is subjective, we do not consider that a difference of one or even two seconds is significant. A preliminary report on this has been published.⁶ The subjects always lie down one-half an hour beforehand, and were stripped to the waist to avoid venous compression. When standing, the vein was injected with the arm hanging at the side. Procaine without epinephrine was infiltrated to prevent pain. Table 2 indicates that the circulatory rate from arm vein to throat is, on the average, the same when lying or standing.

TABLE 2

Subject	Lying	Time in seconds.		
		Standing	Standing	Lying after
		5 min.	30 min.	standing 5 min.
1) K ₁	24	20		
2) K ₂	15	17		17
3) K ₃	14	12		14½
4) O	14	12		
5) A	11½	11		
6) M ₁	17	16		
7) M ₂	18½	13		16½
8) C	12	10		
9) F ₁	10	14	15	
10) F ₂	15	14	13½	
11) S	12½	15		

Average 14.8 sec. 14.0 sec.

Bock et al.⁷ found that, in a few subjects, the venous circulation time from the arm to face, standing and lying, was either the same or slightly faster

standing. However, Sweeney and Mayerson,⁸ have shown that re-circulation to the lungs occurs sooner when standing. This would indicate that the circulation in the upper body is faster. Since the arm veins are noticeably engorged when standing, and the velocity is the same as lying, therefore, the venous return to the heart from the arms and thorax (but not the brain) should be greater standing than when lying. Since the venous return from the arm thus appears increased, one may assume that the arm arteries may not contract, as do the arteries of the lower body, and perhaps may dilate as the cephalic arteries are assumed to do.⁵

Although the temperature of the skin and subcutaneous tissue of the hand falls on standing, indicating peripheral vasoconstriction,⁹ this would not necessarily indicate that vasoconstriction also occurred in the deeper vessels. However, Oliver claims that the diameter of the radial artery diminishes on standing,¹⁰ so that the problem of the circulation in the arm in the erect posture is unsolved.

SUMMARY

Upon correlating the results and assumptions of various investigators, we may tentatively assume that the following pertinent changes occur upon standing:

1. Blood accumulates in the veins of the lower part of the body, with resulting drop of blood pressure in the carotid sinus, compensatory cephalic vasodilation, and relative cephalic ischemia.
2. Arterial vasoconstriction and stagnation of the venous blood occur in the lower body, with resulting increased CO₂ content, diminished O₂, and diminished pH of the venous blood in this area, and diminished circulating volume of the blood.
3. Less CO₂ excretion per minute and diminished O₂ absorption due to venous stagnation may occur in some subjects in the *early* part of standing, in spite of the increased CO₂ production and O₂ utilization by muscles. This will result in a temporarily decreased pulmonary ventilation.
4. In spite of the decreased pulmonary ventilation, the diminished circulating blood volume is being over-ventilated, probably due to cephalic ischemia. This results in a lowered arterial CO₂ tension and tendency toward an arterial alkalemia, so that the

respiratory center may be supplied with normal blood, in spite of the relative cephalic ischemia. This arterial alkalemia should also help neutralize the CO₂ acidemia in the leg veins. This arterial alkalemia is reflected in the venous alkalemia of the arms.

5. There is possibly an increased blood flow through the thorax, suggesting arterial vasodilation, and diminished blood flow through the legs and brain. The effect in the arms is disputed.

6. The velocity of the venous circulation from the arm to the throat is apparently unchanged, although the total flow may possibly be greater.

CONCLUSION

The drop in arterial alveolar CO₂ tension upon standing is due to over-ventilation of the diminished circulating blood volume, probably caused by cephalic ischemia affecting the respiratory center. This results in a tendency toward an arterial alkalemia. This respiratory stimulation may not be due to a fall in pressure within the carotid sinuses, since increasing the blood pressure with vasopressor drugs has no distinct effect upon the CO₂ tension. The arm to throat venous circulation rate is not appreciably altered on standing.

We are indebted to Doctor William B. Porter for his suggestions, to Sandoz Chemical Works for supplying us with Neo-Calglucon, and to Smith, Kline and French for the Benzedrine.

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INTUSSUSCEPTION COMPLICATING TUBERCULOUS ENTERITIS.

Report of A Case.

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and

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Many reports indicate that the most common cause of intussusception in adults is polyposis of the intestine or some similar condition. The literature records only a few cases of intussusception occurring during the course of tuberculosis of the intestine. Eliot and Corscaden,¹ who collected 300 cases of intussusception in adults, give reference to ten cases associated with tuberculosis of the intestine, but in some cases the diagnosis of tuberculosis was doubtful. In a case reported by Easton² the intussusception was not located at the site of the tuberculous lesion. The following case recently came under our observation.

REPORT OF A CASE

CLINICAL SUMMARY: A white man, aged thirty-four years, was admitted to Jefferson Hospital, Roanoke, Virginia, on September 26, 1940, com-

tuberculosis for four years. On physical examination he was greatly emaciated. The temperature was 99°F. The abdomen was greatly distended and was tympanitic. Generalized abdominal tenderness was present. Palpation for masses was unsatisfactory because of distention. The leucocytes numbered 8,700 with 64 per cent neutrophils. A diagnosis of tuberculous peritonitis with intestinal obstruction was made.

After preparing the patient with intravenous fluids and chlorides, and duodenal drainage, an exploratory laparotomy was performed under ethylene anesthesia. He was found to have tuberculous enteritis with early peritonitis, and an intussusception involving the ileum about 2 metres above the ileo-cecal valve. An attempt to reduce this was not successful because of

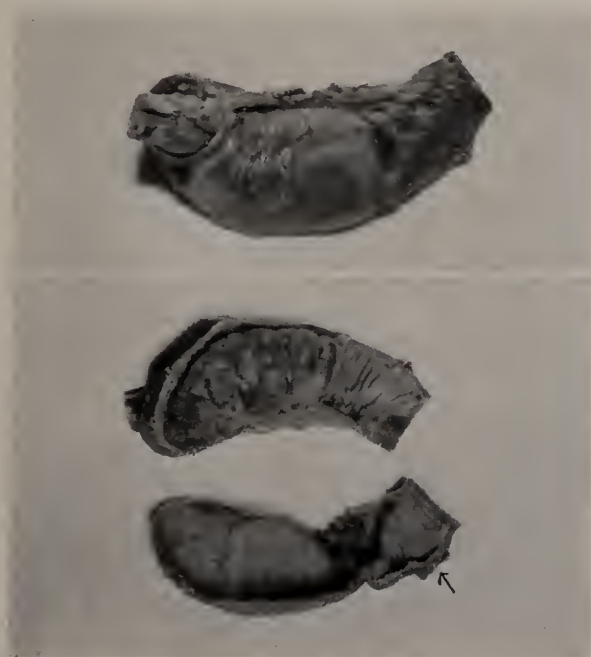


Fig. 1.—External and internal views of the intussusception. Arrow indicates one of the tuberculous ulcers.



Fig. 2.—Photomicrograph of tubercle in floor of one of the ulcers.

the friability of the bowel. Therefore, the involved portion was resected and an end-to-end anastomosis was done. The patient died quietly about twenty-four hours later and no autopsy was obtained.

plaining of generalized abdominal pain, abdominal distention, obstipation, nausea, and vomiting for four days. He had been known to have pulmonary

PATHOLOGIC SUMMARY: The specimen (Fig. 1) consisted of a segment of ileum which, without reducing the intussusception, measured 14.0 cm. in length. The intussusception caused a firm mass

measuring 8.0 cm. in length and 3.5 to 4.0 cm. in diameter. On section, three tuberculous ulcers producing intestinal strictures were found. One was near the apex of the intussusceptum, one was in the proximal portion of the intussusciens, and one was

10 mm. and the serosa overlying them showed tuberculous peritonitis. The mucosa of the intussusceptum showed hemorrhagic infarction. Early necrosis was seen in the distal portion of the intussusciens. Histologic sections confirmed the tuberculous character of the ulcers (Fig. 2).

COMMENT

It seems probable that the intussusception began when a stricture produced by a tuberculous ulcer of the ileum slipped into the next portion of the bowel. This stricture remained at the apex of the intussusceptum as the latter advanced, slipping past the second ulcer which was associated with less intestinal constriction than the first (Fig. 3). When the process advanced to the point where the second ulcer occupied a proximal position in the intussusciens, intussusception stopped because of the resistance offered by the second ulcer.

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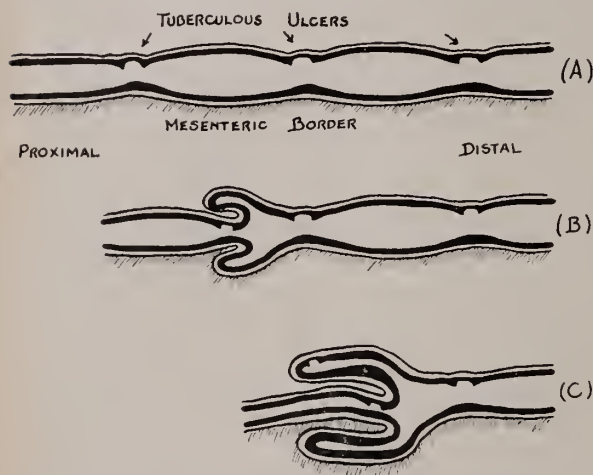


Fig. 3.—Probable mode of development of intussusception. Invagination began with proximal tuberculous stricture (B), and was arrested by the ulcer in the proximal portion of the intussusciens (C).

below the intussusception as indicated in the diagram (Fig. 3C). Each ulcer measured about 20 x

ACUTE EPIPHARYNGITIS.

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The epipharynx represents a rather inaccessible anatomical space frequently overlooked on routine examination. An entity often undiagnosed by the general practitioner and oftentimes by the otolaryngologist is an acute inflammation confined to the mucous membrane of the epipharynx. Superficial examination of the nasal cavities and the oropharynx may reveal no evidence of the extent of pathological changes behind the soft palate. The diagnosis will remain obscure unless the symptomatology or routine posterior rhinoscopy leads to the site of infection.

The current literature contains many references to tumors, cysts, abscesses and bursae of the nasopharynx, but little reference is made of acute primary infection of the mucous membrane of the post-nasal space. Textbooks contain meager mention of this entity, and state that in its milder forms acute inflammation may be confined to the epipharynx. Recently Carmody¹ and Hill² have stressed the

problems of diagnosis in the epipharynx; no consideration is given to this subject.

Acute epipharyngitis may result from, precede, or exist simultaneously with infection in the oropharynx or in the nose. More important, it may occur as an inflammation solely of the postnasal space, extending but little to adjoining regions. The first symptom is burning and soreness above the palate. This is soon followed by extension into the nose or down into the pharynx where the major signs and symptoms of a typical cold may manifest itself. If the infection is confined to the epipharynx the patient will complain of a sense of fullness in the region of the palate, a mild to a marked obstruction to nasal breathing, and, particularly, pain and soreness in the sternocleidomastoid muscle on each side. A characteristic impediment of speech similar to enlarged adenoids is noted. There is some difficulty in swallowing but not a pronounced sore throat. The neck may feel

stiff and an occipital headache is often present. Frequently the only complaint is pain and discomfort in the back of the nose.

Depending upon the severity of the infection, constitutional symptoms—headache, fever, and general malaise—may be absent, mild or considerable. The diagnosis is difficult in children, and is, no doubt, generally overlooked. It is often stated that acute epipharyngitis constitutes a common obscure cause of fever in childhood. In adults the diagnosis is confirmed by posterior rhinoscopy or examination with the nasopharyngoscope. The edematous, swollen mucous membrane is covered with a gray white exudate. The acute inflammation may be confined to the remains of the pharyngeal tonsil and constitute an acute adenoiditis. The lateral bands or folds running down from the torus of the eustachian tubes are acutely inflamed and studded with white spots of a follicular inflammation. The exudate may be somewhat adherent and swabbing results in slight bleeding. Examination of the nose, sinuses and pharynx will often show but slight upper respiratory infection. On anterior rhinoscopy, after thorough shrinking of the nasal mucous membrane, the mucopus covering the posterior pharyngeal wall or adenoid tissue can be seen.

The bacteriological examination is variable and shows nothing more than the usual mixed nasopharyngeal flora. Streptococci of various types predominate with a mixture of staphylococci, micrococci catarrhalis, pneumococci and influenza bacillus. It is said that a pure culture of the offending organism can be obtained in 46 per cent of instances. Indeed, in ordinary pharyngeal cultures the predominating organism can be obtained more frequently from the epipharynx than from the pharynx.

For some time after the acute inflammation has subsided the obstruction to breathing may continue, due to the hypertrophied adenoids. Frequently an adenoidectomy is later necessary.

In my experience ear manifestations in adults have been surprisingly infrequent, although in several instances the presenting complaint was deafness and symptoms of eustachian tube blockage. Acute middle ear abscess is an uncommon complication in primary epipharyngitis. In children, due to the anatomical conditions favoring tubal extension and the presence of an acute adenoiditis, middle ear infection is commonly found.

The difficulty in examination, and the difficulty in

the medical and surgical treatment of nasopharyngeal disease is due to failure of adequate visualization of the post-nasal space. The pharyngeal speculum, palate retractor, post-nasal mirror, and nasopharyngoscope all lack complete exposure. Richards has suggested a distal light on a pharyngeal speculum. I have used a Curv-lite retractor and have suggested to the manufacturer the construction of an appropriately curved tubular or flat speculum made of the newer plastics which transmit light around corners.

Failure in diagnosis and inadequate treatment results, in many cases, in chronic nasopharyngitis. More frequently than observation will allow, we attribute the cause of the chronic pharyngitis to the irritation of discharge from the paranasal sinuses. Hyperplasia of the lymphoid tissue and chronic inflammatory changes in the pharyngeal mucous membrane may be primary and not always secondary to ethmoiditis. Recently an observer³ has emphasized chronic and subacute nasopharyngitis as the cause of obscure fever with malaise, loss of weight, and muscle aches, and as an important etiological factor in cases of vertigo and tinnitus.

Post-nasal discharge is the presenting complaint in many patients in rhinological practice. This symptom may be a physiological hypersecretion with nocturnal stagnation, a product of modern living conditions, which places a tremendous load on the nasal mucous membrane. The chief causes of post-nasal drip are hypertrophic rhinitis, paranasal sinusitis, and chronic nasopharyngitis. Not infrequently Thornwald's disease or nasopharyngeal bursae may present similar symptoms and signs and should be carefully differentiated.

The treatment of the acute phase is chiefly the local applications of silver nitrate, mercurochrome, gentian violet and similar antiseptics. Chemotherapy is of service if the offending organism is identified as suitable for this type of therapy. The disease is self-limited and complications infrequent. Applications of heat to the back of the neck and pharynx and analgesics and antipyretics for the constitutional symptoms are routinely ordered.

The treatment of chronic nasopharyngitis is somewhat more difficult. The use of alkaline antiseptic sprays, autogenous vaccines and filtrates applied locally, the use of iodides in various forms, electrocautery and radiation therapy for the lymphoid hyperplasia, avoidance of tobacco, alcohol or smoke,

and the local application of silver nitrate have been advised.

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IS ROUTINE CIRCUMCISION OF MALE CHILDREN AT BIRTH JUSTIFIABLE?

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There seems to be an increasing tendency for those practitioners doing obstetrics to circumcise all newborn males. Indeed, not a few obstetricians are performing this operation on the male child as soon as the delivery is over. An estimate, which Jacobs claims to be conservative, places the number of circumcised individuals in the world today at over 200,000,000. An operation which is this prevalent can very easily become an accepted routine procedure without a full realization of the conditions and indications demanding surgery.

This study has its inception while listening to a discussion as to whether or not there was any material benefit from the routine circumcision of the newborn male child. Such discussions are rather frequent, Boulware telling me of one in Birmingham recently; and at a pediatric meeting in Chicago not long ago the question was brought up for a round table conference.

Circumcision was evidently practiced long before the first recorded instance described in Genesis when the covenant between Jehovah and Abraham was solemnized by the cutting of the foreskin. Numerous investigators have read into this ceremony something besides a mere ritual and have extolled the wisdom of Jewry for the formulating of such a prophylactic policy. But, as Newman energetically asserts, I cannot see in the Jewish custom anything but a religious rite. I have reason to believe it dates from the stone age.

Jacobs would have us think that the practice of circumcision originated in Chaldea and from there going to Phœnecia. The Phœnecians are supposed to have spread it over the world. It seems to me unreasonable that even the thalassic kingdoms of Phœnecia could have been responsible for the widespread custom—it has been found in the remote regions of South America, Africa, Australia, New Guinea, and

in the isolated islands of the Pacific. The Indians of remote North America had the same rite. Even the entrepot that was Egypt in the time of Rameses II could not have distributed the practice as world wide as it was and is now. It must have been another one of the primitive expressions of all primitive men, such as the nose boring of the Aborigines in the Dutch East Indies for example.

Why circumcision? What is the significance? Some have said for hygienic reasons. Numerous people, though, practice the operation who have not the foggiest idea of cleanliness, hygiene or prophylaxis. Why their tribes have not died out seems to be mystery. The theory of a special prophylactic custom is untenable.

There is evidence that the rite is a tribal custom or ceremonial—Jewry. Or it may have been a badge of honor, as in the Egyptian state in its glory. The Israelite religion would seem to refute this, although in many tribes the occasion of circumcision is made into a feast day. As Jacobs remarks, since the sexual organs in many cases are hidden, why should much prominence be given to the penis.

Or it may have been an initiation to manhood. Why? Some aboriginal tribes do circumcise at puberty and many look on this as a primitive rite performed because of the instinctive hope of fertility. Malinowski, however, has shown us that the primitive man knows nothing of the cause of pregnancy. Copulation is not connected with the enceinte female at all, the condition being thought to be merely a visitation of a departed spirit. And if this visitation is the hope, why should cutting of the foreskin be practiced on the child in the newborn days as it frequently is. The children growing up indulge in sexual play by the time they see a difference between male and female, knowing nothing of the potential

aftermaths of such play. After they are of age a mate is selected and pregnancy is a mere happening.

Ferrer thinks the operation had its origin in religion,—“The phallus is a divine organ, so what would be more alluring to the gods than to offer in honor of their enlightened spirits a portion of the penis”. This thought, though, would be repugnant to the Jews.

Hunger and sex are possibly the main thoughts of primitive races. Most of their ceremonials have a sexual background—if the occasion is not war; and even if it is, then sexual orgies follow. Even in this “civilized” time Nanking is an example. The penis to these primitive people is not a means of propagation (Malinowski) but a means of sexual gratification. Such a pleasurable organ should be decorated. Miller tells us how the pygmies affix their atrocious and laughable penis sheaths to accentuate and display the male organ. Others decorate the penis and pubis with shells. The tattooing of both male and female sexual regions is a common occurrence. We can easily believe that the wearing of the celebrated fig leaf was just a means of drawing attention to the orgiastic tendencies and thoughts of the wearer. In the days when “knighthood was in flower” cod bags were very much in evidence. I advance the theory that circumcision was another adulation of sex.

It occurred to the author that perhaps the opinions of a representative number of urologists and pediatricists might give one an insight as to the value of the operation when it is performed routinely. Of the letters written (not questionnaires) approximately 75 per cent were answered. Because of the frequent intrusions on the time of outstanding men I was gratified at the interest shown.

Forty-three urologists replied. Of these, twenty-six favored routine circumcision of the newborn male; seventeen did not advise it. The differences of opinion were most interesting. For instance, Young believes that, “If there are no contraindications”—“All newborn males should be circumcised”, whilst Herbst is, “Very definitely against routine circumcision”.

Twenty-six pediatricians replied. Of these seven favored circumcision as a routine measure; nineteen did not. Helmholtz advises it “For all male children”, while Sprague thinks that such a procedure is “A useless and sometimes disastrous mutilation of a tissue that has a definite and protective function”.

Upchurch tells me that the vast majority of his patients with gonorrhea and penile syphilis need circumcision and “It is a rarity in my practice that a person who has been circumcised has either one of these diseases.” That seems to be the outstanding argument of those favoring the operation. Kahl seems to think a foreskin even predisposes to venereal diseases; so does Folsum. Hinman thinks the chances of infection are diminished after circumcision.

It is rather hard to refute those arguments. Herbst, however, sees “A very definite number of children who get meatitis because of the fact that the meatus is not protected by the prepuce in the diaper period, and results in definite inflammation, infection, bleeding, and sometimes stenosis”.

Dean writes that “Since I have been compelled to amputate approximately 200 penises for cancer, and since the only cause in each case was chronic irritation beneath a tight prepuce you may well imagine that I strongly recommend routine circumcision within a week of birth.” That is the opinion of almost every urologist. A notable exception is Ferrer who had “A record of 278 cases, and to be frank with you, sir, I cannot blame carcinomatosis to phimosis because none of the cases that I have seen had a history of phimosis”. In the literature there has been only one case of a Jew having carcinoma of the penis. It is also almost unknown among the Mohammedans but they are circumcised just before marriage.

It is then stated that “The circumcised child will be less likely to indulge in masturbation”, and that there will be “More general gratification of the partner in sexual relations”. Two of “The thousands of reasons” that Nakin “Could cite” in favor of routine circumcision are these. Bolend also thinks the circumcised male, “Will make a more desirable mate”, and Irwin thinks impotence is more prevalent in the uncircumcised. Hinman says, “There is less chance of wrong habits of sex.”

It is interesting that Grant thinks, “Unquestionably the properly developed prepuce adds to the satisfaction of intercourse.”

The seven pediatricians advocating routine circumcision give as their reasons the same answers as do the urologists. Gengenbach thinks lack of circumcision “Could be a factor in their nervous instability”. Loeber states that “I believe circumcision eliminates allergic rashes from reflex irritation.”

Those pediatricians opposed, cite the possibilities of untoward results, Brown mentioning "Gangrene of the penis, several cases of pyelitis; general furunculosis; cicatricial constriction around the corona and innumerable meatal ulcers". Gonce also has seen many meatal ulcers which have given trouble. Those are never seen in the uncircumcised. Amick has had to transfuse quite a few bleeders for an obstetrician who routinely circumcised males at birth.

Mitchell doubts that early circumcision lessens the incidence of masturbation. Faber emphatically states, "I do not know of any sound medical reason for the routine circumcision of all newborn males."

The operation is sometimes advised for the treatment of enuresis. Hillis sees no advantage in this. He also denies that masturbation can be avoided by circumcision. All boys masturbate at sometime; if this habit continues after puberty there is likely some nervous instability.

"Unfortunately many obstetricians and the practitioners rate the surgical risk of circumcision and manicure about equal." Campbell says this in no uncertain terms and, like Vallett, has observed, "Several unfortunate occurrences following these routine circumcisions on the autopsy table". Hinman and many other urologists think the "average job" is not properly done.

The time of operation as fixed by the Jews must have been learned through painful experience. To circumcise an infant as soon as it is born is taking an unjustifiable chance. How is one to know if there is an hemorrhagic tendency or not? Amick calls attention to this. There are changes in the fetal blood picture the first few days of birth that should be considered. To submit a child to an operation without taking into consideration the dangers of hemorrhage would seem to be sheer negligence.

What is so often overlooked or not sufficiently recognized is that the internal preputial membrane almost always adheres to the glans. It is a physiological condition. The adhesions usually disappear spontaneously within the first year or at the latest the seventh year. There must be some physiological purpose for this and as long as there is no harm

to the babe it would seem the better wisdom to leave the prepuce there.

As to the argument that since it may be better to circumcise the infant in the neonatal period rather than face the possibility of it being necessary later on, Caulk and Patton would rather wait. They mention the possibility of stunting the growth of the penis if too much tissue is removed. Also, the newborn period is a period of adjustment and, as Brown says, "If done in the newborn period routinely to avoid later difficulty why overlook the tonsils and appendix."

After digesting the 69 letters written and numerous articles in the literature and after discussing the problem with my friends I am right back at the beginning.

"There are," as Ravenal said, "too many ifs and ands." My present procedure is as follows:

When the newborn male is born, after the cord is cut and clamped and the mother has been pronounced all right, with a mosquito forceps the preputial opening is stretched. I have seen no scarring resulting from this procedure. If the family asks about circumcision, it is not recommended, neither is it absolutely condemned. The so-called advantages are pointed out, also the disadvantages, and, further, the dangers are enumerated. If there is unreasonable insistence that the operation be done I do it on the seventh or eighth day.

It seems to me that the main part in the solving of the problem is the education of the mother. Cleanliness must be enforced. She must be taught to gently retract the prepuce, not necessarily the whole way at once, but a little more as the child grows older. Most of the cases of painful micturition are not because of the need of circumcision but from the lack of cleanliness and an ammoniacal diaper. It is the pediatrician who is responsible for the teaching of the mother.

Perhaps no conclusions can be reached from this discussion, but I hope it will make us think about it more before advising a mother to have her newborn boy circumcised.

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REPORT OF A CASE OF HEMORRHAGE FROM A MECKEL'S DIVERTICULUM.

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Gross intestinal bleeding is always a matter of grave concern to both the patient and physician. Tarry stools, even though copious, may not alarm the patient or his friends. The passage of blood, recognized as such by the layman, is very apt, on the other hand, to bring the patient to the physician for an explanation and advice as to the proper steps to be taken. Usually some one of the common causes of intestinal bleeding can be diagnosed and treatment recommended. Occasionally, however, the case may present a very serious diagnostic problem. The object of this report is to call attention to one of the less common causes of hemorrhage, one that is seen usually in children or adolescents, but one that occurs with sufficient frequency to make it wise to have it always in mind. It is also desired to place another case of bleeding from an ulcerated Meckel's diverticulum on record.

The writer has not made an exhaustive review of the literature on Meckel's diverticulum. It is noteworthy, however, that while the older literature deals with questions of occurrence, inflammation of, intestinal obstruction due to, and kindred subjects, the only references to hemorrhage from a diverticulum that have been found have been in the literature of the last ten or twelve years. None of the older textbooks, as far as reviewed, refers to the diverticulum as a cause of hemorrhage. The latest editions of Christopher's Surgery and of Cecil's Medicine do mention the fact and a number of articles have been found in the journals of the past ten years referring to the matter. Cobb¹ gives Denecke the credit for first having discovered an ulcer in a Meckel's diverticulum in 1902, and further states that Deetz in 1907 described the presence of gastric mucosa in these structures, stressing the fact that these ulcerations were similar in character to the common peptic ulcer of the stomach and duodenum. He thus laid the ground work for a recognition of bleeding from one of these ulcers as a possible cause of intestinal hemorrhage. Corriden² in reporting a case makes the statement that intestinal hemorrhage between the ages of five and fifteen is a rare condition and that an

ulcer of a Meckel's diverticulum should always be suspected.

The incidence of Meckel's diverticulum is variously given at 1 to 2 per cent. With regard to the incidence of aberrant tissue, Johnson and Renner³ quote Sheetz as stating that in a study of thirty-seven specimens of Meckel's diverticulum he found 16.6 per cent to contain gastric mucosa, 10 per cent duodenal or jejunal mucosa, 2.5 per cent pancreatic tissue, and 5.4 per cent both pancreatic tissue and gastric mucosa. In other words, approximately 33.3 per cent of all cases of Meckel's diverticulum may be expected, according to these figures, to have some form of aberrant tissue. Renner⁴ collected and reported seventy-eight cases. Of these, forty-eight, or 61 per cent, showed ulcer. Talley⁵ quotes Heiner as having reported fifty-one cases (presumably collected), 66 per cent of which showed ulceration. These figures give one some conception of the relative importance of considering an ulcer of a Meckel's diverticulum as a possible source of any intestinal hemorrhage. Considering the incidence of Meckel's diverticulum to be 1 per cent and that, of these, one-third may be expected to have aberrant tissue within the diverticulum, and, further, that two-thirds of this number will have an ulcer, one would see that out of every five or six hundred children there would be at least one chance for hemorrhage as a result of an ulcerated Meckel's diverticulum.

In reading the cases reported one is struck with the similarity of the symptoms and findings. The condition is usually found in a young child, the oldest case found recorded by the writer being an adult of twenty-nine. In the younger children, the child may be found in collapse with a blood soaked diaper and apparently with abdominal pain. Those a little older usually complain of abdominal pain and later go into collapse, accompanied or followed by bloody stools. Some of the older ones give a history of attacks of colic earlier in life but without the history of the bloody stools being recorded at that time. Such phrases as, "large amounts of blood by rectum", "copious bloody stools", etc., are used. The location of the pain, where given, is usually placed

at or near the umbilicus. The report of the adult, who was a college student, twenty-nine years old, mentioned attacks of nausea and "dull, gnawing pain" in the central portion of the abdomen, usually coming on after the mid-day meal. The pain did not radiate. Still another case had "intermittent pain in the lower abdomen". A seventeen-year-old male had had pain for three years, gradually becoming more severe. The attacks were frequent and the pain knife-like. The pain occurred in the region of the umbilicus, usually to the left, was most apt to appear about three-quarters of an hour after meals. Speculation on the question of the time of onset after food, as brought out in this case, leads to a possible explanation for the frequency with which those diverticula containing aberrant tissue tend to ulcerate. It has been noted that the gastric tissue in the diverticulum begins to secrete acid synchronously with the stomach. The writer recalls one article, the reference to which, however, is not at hand, where a diverticulum had remained attached to the umbilicus and presented a mucous fistula which was noted to secrete acid with the taking of food. In the case of the free diverticulum this acid is poured out and comes into contact with intestinal mucosa unprotected by the alkaline mixture of food and digestive juices which, at the time, has not yet reached the level of the diverticulum. Thus, a condition analogous to the marginal ulcer of gastro-enterostomy, where acid gastric contents come into contact with mucosa normally adapted to an alkaline medium, is produced.

The following history represents a fairly typical case, as compared with others reported, of this condition in an adolescent.

This patient, H. McN., was referred January 3, 1939, because of a series of massive intestinal hemorrhages. The latest had occurred about three weeks prior to the case being referred.

Patient was eighteen years old and gave a past history of having had a series of massive intestinal hemorrhages at the age of thirteen. At that time he spent five weeks in a large teaching hospital, but was discharged without a definite diagnosis. He was free from bleeding at the time of discharge and remained free for two years.

He then had another hemorrhage, and a year later another, that is, about two years prior to admission. There was no more bleeding until about two months

prior to admission when he had a series of very severe hemorrhages. These recurred, as stated above, about three weeks prior to admission. Patient stated that he had some prodromal symptoms and a dull pain, which he referred to the region about the umbilicus, sometimes to the right and sometimes to the left, more often he thought to the left side. Patient gave no clear history of indigestion and no history of eructation. He is not constipated and when he has had purgative medicine he has not done well.

Patient has had the usual diseases of childhood, but no history of any other serious illness.

In the family history one was unable to elicit any history of cancer.

On examination at the time of admission he was found to be very anemic. He was quite sick looking. Lungs showed vesicular breathing and were resonant throughout.

Heart dullness extended in the third interspace out to the mid-clavicular line. There was a soft systolic murmur.

No lymphadenitis was made out.

Thyroid was not enlarged.

Liver dullness extended from the fourth rib to the costal margin.

The abdomen was symmetrical, free from muscle resistance, masses, or tenderness. Spleen was not palpable. There were no purpuric spots.

Red blood count was 2,250,000. White blood count was 8,150.

Hemoglobin was 40 per cent. Sedimentation rate was 5 mm.

Polymorphonuclears 75 per cent. Mononuclears 25 per cent.

Coagulation time was four minutes.

Urine was negative.

Feces contained blood but no mucus.

Patient was observed in the hospital for about two weeks prior to operation. He was transfused. There was no evidence of obstruction, thus ruling out an intussusception. He was found to have an achlorhydria. By X-ray he was found to have hypomotility of the gastro-intestinal tract, and there was a spastic colon. The radiologist, using a barium enema, stated that at the hepatic flexure there was some irregularity, with slow filling and with suspicion of a defect. The cecum filled but there was no spilling. There was no evidence of polypi in the colon, though in the sigmoid one could not be dogmatic, as it was impos-

sible properly to visualize either with the X-ray or with the sigmoidoscope the whole of this organ. Examination by proctoscope revealed normal appearing mucous membrane as high as one could see.

In summarizing the possible causes for the hemorrhage one felt that the usual causes, peptic ulcer, varicosities due to enlargement of the spleen, colitis, polypi of the colon, and hemorrhagic diseases, were ruled out by the various tests above mentioned. Hence, the patient was explored with a provisional diagnosis of hemorrhage due to an ulcer of a Meckel's diverticulum. Patient was operated upon on January 20, 1939, with the following findings:

The abdomen was opened through a left paramedian incision, centering about the umbilicus. The colon presented and appeared to be normal. Coils of small intestine appeared normal. Hand was then passed to the lower right quadrant, seeking for the ileo-cecal region, and a mass was encountered in the small intestine. This was brought out and was found to be about 4 to 5 cm. in diameter, was indurated and lay along the mesenteric border, situated approximately two feet from the ileo-cecal valve. There were numerous enlarged lymph nodes throughout the mesentery, at least as far as the ileo-cecal valve. The loop of intestine was resected rather widely on either side of the mass, and an end to end anastomosis done. Patient made an uneventful post-operative recovery and was discharged healed on the fourteenth day. Patient has been heard from since and has continued well.

Gross Examination of the Specimen. On examining the specimen the lumen of the bowel was opened opposite the growth and the ostium of the diverticu-

lum was found to be at the mesenteric border. This measured approximately 5 or 6 mm. The diverticulum was cut and the cavity was found largely occupied by a dense scar. There was marked adenosis of the mesentery.

Microscopic—(Path. Dept., Univ. of Va., Abbreviated report): "Sections taken proved the presence of gastric mucosa in the specimen. It is of the fundic type." The diagnosis was Meckel's diverticulum containing gastric mucosa.

As stated above, this cause of hemorrhage should be considered in children and young adults. The writer was unable to find any case of hemorrhage in an adult older than the one mentioned, namely twenty-nine years, and the vast majority of the cases reported as reviewed were under twelve years of age. No attempt has been made to discuss the various other pathological conditions which may be produced by a Meckel's diverticulum.

Several cases of malignancy involving a Meckel's diverticulum are on record, and, of course, it is altogether possible that hemorrhage from the bowel may accompany such a condition. These, however, are usually found in older persons. In dealing with children, if one has in mind the possibility of a hemorrhage coming from a Meckel's diverticulum, he may avoid over-looking a serious condition and one that is easily amenable to proper treatment.

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THE GENERAL PRACTITIONER'S FUTURE.*

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As I complete my term of office as your president, I want again to express my sincere appreciation of the honor you conferred upon me and, as an expression of my gratitude, pledge my continued devotion to and interest in the Society. Our very efficient secretary, Dr. King, and the members of the executive committee deserve most of the credit for the advancement of our knowledge in the science and art of

medicine, as well as the economic phase which we are all prone to overlook.

The general practitioner's future is very uncertain because of national and international conditions that are changing daily. Those called to active service will undoubtedly sustain a financial loss, while those remaining at home will receive an above average increase in income. If we are unable, or not inclined, even to partially compensate those called for their loss during their period of service, we should at least

*President's address delivered before the Southwestern Virginia Medical Society at Marion, Va., October 2, 1940.

be willing to send as many of their former patients as possible back to them, if and when they return, thereby helping them to keep their professional losses as low as possible.

The physician's future will be secure and well safe-guarded in his own hands, unless lay and political organizations are able to convince Federal and State authorities that we are rendering *inadequate* service to the masses.

It is not generally known, or at least not fully realized, that the Government has established, and in most cases subsidizes, group health units in about twenty-five States. The Farm Security Administration is the parent of these units, and its purpose is to keep farmers in health so they can work out their debts to the F. S. A.

This idea is spreading so widely that it amounts to a lot more than an expedient for F. S. A. to get its money back. It is fast becoming a nation-wide practice.

In South Dakota, for example, one-half of all the farm families of that State are eligible for group health treatment. Member families pay a regular fee—sick or well—of \$2 a month, and the doctor takes care of them for everything from a toothache to child birth.

Though the American Medical Association has fought the group health plan, State and local medical associations affiliated with the A.M.A. are working with Farm Security in every State where the units have been established. *If* this plan only had *more medical* supervision and *less political* domination the clients thereof would get better service and the profession a more just compensation.

Our experimental contract with the Farm Security Administration, I am told, is not working out as we had hoped, or were led to believe it would, and the best test I know of its workability is to see if our members continue the work under the contract that allows us to stop anytime we feel so inclined.

Group practice, many claim, is better for the physician in that it removes the problem of the business end of his professional service and gives him full opportunity to devote his energies to the practice of medicine, instead of being harassed with the problems of collections and bookkeeping.

Medical men have a chance to forestall government control by taking the leadership in group medicine. Suppose we had, in every city and town, com-

munity medical groups—might not this mean *more paying* work for *more doctors*, a better level of health, and fewer financial worries for everybody?

The economic burden of a plan like this seems entirely too great for the medical profession to work out alone. The Federal Government could come to our financial aid with a plan which would meet the full cooperation of the medical profession. Any such plan should be safe-guarded by at least three fundamental principles: First, the medical profession and *not politicians* should direct the plan; second, the patient should always have the right to have the free choice of his own physician; third, "The Doctor-Patient Relationship" should not be disturbed. The Government should *not* desire the privileges of any one of these three fundamental prerequisites for success of such a plan.

Would it not seem that some plan could be worked out whereby all these advantages could be put to work and the great army of the needy reap the unbounding benefits to be derived therefrom?

Would it not be a great epoch and does not the trend of the present time demand a *well organized medically supervised cooperative plan* of more adequate medical service by the physicians *aided by* the local, State and Federal Governments? Would it be well for all medical leaders to lend our full influence to the A.M.A. Committee to the end that some satisfactory plan may be evolved, adopted and put into practice?

It would take divine wisdom to foresee the future but it only requires common sense to keep constantly before ourselves, before the public, and before our legislators the necessity of maintaining unsullied whatever is noble and worthy in medical practice. The only guide we have for the future is experience. Experience is largely the record of our mistakes—by trial and error. Lord Byron said, "The best prophet of the future is the past." There is ample evidence in events of the past of the deterioration of medicine under political influence. There has been no particular dissatisfaction of the public with the present type of medical service.

When physicians in the United States become, if they ever should, mere robots of a huge national compulsory system of medical care, making diagnoses from card indexes and mechanical gadgets, and prescribing treatment from prepared and numbered labels, and when patients become a mere col-

lection of interesting human specimens to be shunted from one corner to another of a medical repair shop for some heartless and pseudo-scientific tinkering, America will have lost one of its greatest institutions—free and independent medicine—and the American people will have lost some of their most valuable human traits, namely, confidence in, respect for, and reliance on the scientific men and women who protect their health and prolong their lives.

It is up to all of us to help mold public opinion, by the spoken and written word, as to the importance of medicine, initiating and directing any plans which have to do with governmental control.

Whether we accept lay leadership in telling us how, and when, for what, and on whom we shall ply the art of our science, rests with the membership of the medical profession.

Let us return now to a brief discussion of our subject, "The General Practitioner and His Future". May I suggest a few ways, and give you my humble opinion relative to prevention of so-called socialized or government administered medical practice.

First, let us think of our test of worth as being based on satisfactory civic and professional service rendered, as well as obligations to homes and families discharged, thus liquidating our debt to our respective locations.

Second, we should charge and receive reasonable compensation for services rendered, keeping in mind the income of our patients and their ability to pay. Those unable to pay should be cared for by the local or county welfare board on recommendation of their physician, who knows better than anyone else their economic status.

Next, we are frequently accused by the laity and others of not being able to get along peacefully with each other, and of unethical practices. If this is true, an effort should be made to correct it, and try treating others as we would like to be treated.

Another thing we frequently hear is that we are too busy to attend meetings or participate in their programs. True or untrue, this should not be, and I feel that the absentees are the losers.

Federal and State health boards come in for definite criticism by some. I think they are in existence because we have not devoted sufficient time and thought to the work they are now doing or have done in the past; further, they are making every possible effort to refer the work back to us where it

properly belongs, if we will cooperate in discovery, prevention and treatment of disease. Progress in diagnosis and treatment of syphilis illustrates well what I refer to. Maternal health and child welfare as administered by our State Health Department deserves commendation. The local doctor should determine who is eligible for admission to such clinics.

I have said the future of the general practitioner is uncertain, and have outlined briefly a few things affecting it. If we engage actively in politics as related to medicine, are ethical and cooperate, keep as well informed as our status will allow, and, in the final analysis, if we are proud of our profession and location, and live so that our patients have reason to be proud of us, our future will remain in our own hands instead of the Government's.

Few people realize the very important part medicine has played in shaping civilization.

In reviewing Medicine and Surgery during the Middle Ages, we cannot help being impressed by the great advancement which present-day medicine and surgery portray. We may well be proud of our choice to enter this great and worthy field of humanitarian service.

Medical science will march on. Disease after disease will be conquered; the public will become educated in how to avoid disease; the medical profession will keep abreast of the march of medical science; the longevity of life will increase; and all this will bring to humanity, health, happiness, prosperity, and the joy of living.

What has been the motive for medical progress? Doctors, like other human beings, wish to escape pain, defeat, and failure. The preventable death of a patient means all three of these.

There is no consolation if a patient dies. Feeling this responsibility, the doctor has a greater urge to prevent its recurrence; and on such fundamental principles, progress depends.

The task of conserving and improving the nation's health belongs to the medical profession. Too many times and in too many ways and places the medical profession is invaded by lay men and women attempting to assume responsibility in the field of medicine which should be occupied only by medical men and women of dependability and skill.

What could be more disconcerting or ridiculous than some of the radio programs which are dinned into the ears of the American public? And in many

household magazines the advertisements are very disgusting.

These erroneous and misleading statements should be intercepted for the sake of the health of mankind. And we admit that far too frequently the profession falters and follows, instead of leading. Too often we discover that many of our practitioners need to be prodded to keep up with the advance of medical science.

About one hundred and fifty thousand men and women are practicing medicine in the United States to the best of their ability, but the developments of medical science are so rapid that unless these practitioners are willing to reach out constantly to grasp the newer knowledge they will fail to hold the confidence of their communities. There is too great a lag between the discoveries made by the leaders in research and the ability of the rank and file of physicians to use these advances for the benefit of their patients.

We like to think of the great advantages that could be received by all concerned, the public, the physician, and the benefits to scientific medicine, if the local, State, and Federal Governments, and the physicians should all unite in a non-political way and work out some good plan whereby all people, more especially the medically indigent and the low income group, could receive the very highest class of service; this service would cover the most modern scientific benefits to be derived from a plan that would receive full financial aid by the Government and the full benefit of the best scientific medical and public health minds of this country. Then it would be that thousands of poor doctors who are today only making a meager living, warming seats in empty offices, would be examining and treating the diseases of thousands of poor people. These ailments have heretofore, and are today sapping the lives of countless numbers of our citizens. Thousands of people have preventable and curative diseases and do not know it. How can they know it if they are not told? At the same time, however, they are helpless on account of financial distress to have these advantages applied for the benefit of their well being.

Something is wrong with our present system. Millions of Americans receive no medical care of any sort, while thousands of doctors, dentists, and nurses, are without adequate income because they can not find patients with money enough to pay for their services. That is what is known in dramatic circles

as a *situation*. Organized, cooperative medicine seems sure to come. It is evident that our present system of medical care is inadequate. The reason is largely financial. The burden of care to the indigent sick is entirely too great for the medical profession to assume, though the profession should be praised in the highest terms for what it is doing and has done for the indigent.

To those who would keep pace with the progress being made in our profession, let us take every advantage offered through our local, State and national societies, and, as leaders, strive to improve every means for bettering our profession.

More than ever before there is an imperative need for these gatherings to continue from year to year as a means of keeping abreast with the problems of our profession. From these meetings we should take home more knowledge of the various modern trends and problems with which we are constantly confronted.

Gentlemen, I am grateful for your presence here, and I thank you for the undeserved honor that you have shown in listening to my remarks.

Mental Hygiene Activities

The subjects, Probation and Parole, will be constantly before the people of Virginia until they are settled. There is only one way to quiet this agitation and that is by supplying the need for well trained probation officers and well organized system of parole. No makeshift will do. The State might as well face it now.

There is another problem that is forcing its own solution. This is the lack of well trained personnel in State Hospitals. As soon as one State Hospital has an ample well trained staff the results are going to be so impressive that the legislators themselves will demand that all hospitals be so staffed. One doctor to four hundred patients vitiates any attempt at psychotherapy.

At the Danville meeting of the Mental Hygiene Society of Virginia on March 11th, A. Clair Sager of the Juvenile Court of Richmond discussed the problem of probation. The psychiatric treatment at a Virginia State Hospital was presented by Doctor James B. Pettis.

In Danville, as in most industrial cities, the borderline intelligence problem is a permanent one. The child with an intelligence quotient of 75 at 15 years of age would have an approximate mental age of 10 years, and could not be expected to progress much beyond the sixth grade in school, yet should be able to do fair work in the mills. The state law, however, prevents his going to work until he is sixteen. Therefore, there is a lapse of time when neither school nor mill can employ this child. The effort that Danville is making to meet this situation with special schools and practical arts was also discussed at the Danville meeting.

On the 25th of April, in Roanoke, this problem will be discussed before the Mental Hygiene Section of the Virginia Conference of Social Work by a psychiatric social worker, Mrs. Wyatt of the Childrens Bureau, Judge Weems of the Juvenile Court of Winchester, and Dr. James Williams of the State Mental Hygiene Clinic. Dr. Preston, Director of State Hospitals of Maryland, and Dr. Roy McLaughlin of Meriden, Conn., will be on the same program. This program is set especially for social workers, but should have an universal appeal. The medical profession is urged to attend this meeting, as well as a meeting on Thursday night, May 8th, when Dr. Myerson of Boston and Dr. Rowntree of The Selective Service System will address the Mental Hygiene Society in Richmond.

One of the most remarkable things in the medical world today is the doctor's fear of the psychiatrist. Why is it that the doctor hesitates to send a patient who is mentally sick to a psychiatrist or a psychiatric hospital? The doctor has some vague idea that the psychiatrist or the hospital would make the patient "go crazy", as if the psychiatrist could inject "craziness" or that this man trained to treat the mentally sick would so shock the patient that all reason would immediately flee. Perhaps this behavior is based on the idea that as long as mental disease is not recognized it will not exist. The neurosis as a neurological disease is highly respectable, but loses caste immediately when said to be psychogenic. It has seemed to me that the idea of disaster and disgrace associated with psychiatrists, psychiatric hospitals and clinics is much more firmly fixed in the medical mind than among the laity. It is rare that the patient dreads the psychiatric visit, but the doctor wishes the psychiatrist to disguise himself so as to creep upon the patient unaware. Such archaic attitudes still exist in

Virginia to such a degree that the powerful influence of the medical profession is not wholeheartedly behind the advances in psychiatry in the State. The Mental Hygiene Society of Virginia begs the interest of the Medical Society and again urges attendance at the announced meetings.

FINLEY GAYLE, M.D.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for February, 1941, compared with the same month in 1940 and for the period of January through February, 1941, compared with the same period in 1940, follows:

	FEB. 1941	FEB. 1940	JAN.- FEB. 1941	JAN.- FEB. 1940
Typhoid and Paratyphoid Fever	11	6	19	17
Diarrhea and Dysentery	37	78	81	124
Measles	3,343	123	4,193	230
Scarlet Fever	174	142	368	361
Diphtheria	34	59	74	131
Poliomyelitis	2	2	5	4
Meningitis	8	10	14	14
Undulant Fever	1	3	3	4
Rocky Mountain Spotted Fever	1	0	1	2
Tularemia	5	5	13	23

RURAL PHYSICIANS AND CHILDREN'S CAMPS

Owners of summer camps in Virginia for children under eighteen years of age in the near future will be advised by the State Department of Health that requests for permits to operate should be forwarded to the Department as soon as possible.

Permits are based upon an inspection by health department personnel. The inspection includes location, sanitary facilities, water supply, extent of screening against flies and other insects, waste, garbage and trash disposal facilities, source of supply and methods of handling food, employees engaged in handling food, milk supply, methods of washing and sanitizing eating and drinking utensils, general cleanliness of buildings, grounds and equipment, as well as of the bathing and swimming facilities.

The 1940 law regulating children's summer camps

placed the enforcement upon the State Department of Health. Last season the Department inspected 104 camps. However, it is known that this number is below the actual number of camps which operated during the summer of 1940.

Inasmuch as the law was new last year, the Department was inclined to be somewhat lenient towards those who failed to comply with it. However, the Department expects rigidly to enforce its provisions this season. Operators failing to request permits, and found to be operating without them, will be prosecuted.

A permit only is good for the year for which it is issued. All permits must be annually renewed. None will be issued until a request is received from an owner or operator, and the necessary inspection made, indicating that the minimum health standards required by the law have been met.

Physicians in rural communities can aid the Department in enforcing this law by notifying it of camps known to have operated in their jurisdiction last season. Cooperation of this kind not only will aid in protecting the health of camp children, but in addition should markedly reduce the need of prosecuting negligent owners.

Knowledge of the existence of unlisted camps will make possible an official request to the operator that requests for permits be filed by them. The Department's objective is to bring into line operators of children's camps, preferably by direct suggestion, where initiative on the part of the operator is lacking.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN W. HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

The National Meeting.

Only a few more weeks and the members of the Woman's Auxiliary to the American Medical Asso-

ciation will be arriving in Cleveland for their Annual Convention, June 2-6. Have you made your reservations? If not, send your request, *at once*, to Dr. Edward F. Kieger, Chairman of Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

The Story of Jane Todd Crawford.*

One of the projects of the southern auxiliaries is to establish a memorial to Mrs. Jane Todd Crawford, who played an important part at the beginning of a new era in surgery.

This story could take its place with any of the stirring episodes in "Tree of Liberty." The same pioneer spirit that is dramatized in this book and moving picture must have been present in the Crawfords, especially in Mrs. Jane Todd Crawford, who was among the pioneer settlers in the new territories of Kentucky and later Indiana, and was also a pioneer in submitting to a new surgical operation. The story of the Howards sets the picture for the story of Jane Todd Crawford.

Jane Todd Crawford was born in Rockbridge County, Virginia, on December 23, 1763. Her father, Samuel Todd, was at one time sheriff of Botetourt County. Jane was the second eldest of six daughters and two sons. Rockbridge County was then on the frontier of the colonies, bordered on the west by the Alleghenies, beyond which lay unknown territory held by the Indians. Only three years before her birth Daniel Boone had climbed the mountains for the first time.

Jane was married to Thomas Crawford on January 9, 1794, by the Rev. Sam Houston. Eleven years later they moved to Kentucky and settled near Greensburg, the county seat of Green county. Here five children were born to the Crawfords.

When Jane Crawford was forty-six years old she believed herself again to be pregnant. Although the ninth and tenth months brought the most terrible labor pains, there were no signs of a birth. In December the two local physicians, puzzled by her peculiar illness, called Dr. Ephriam McDowell of Danville, Kentucky, into consultation. Although only thirty-eight years old, Dr. McDowell was the leading surgeon of the Kentucky frontier and the best trained

*This paper, based on material from "Doctors on Horseback" was prepared and read by Mrs. John R. Hamilton of Nassawadox, Va., at a recent meeting of the Woman's Auxiliary to the Accomack-Norhampton County Medical Societies.

physician in the Mississippi valley. He made the sixty-mile trip through the frozen wilderness and reached the log cabin where Jane Crawford lay in a box filled with willow boughs.

After a careful and gentle examination and a few words with his colleagues, he asked to be alone with Mrs. Crawford. Dusk faded into night beyond the window of oiled paper. The little room that housed a whole family was lighted by one candle and an open fire over which heavy iron kettles simmered. The tall doctor, overflowing a homemade chair, told Mrs. Crawford the truth and gave her a heroic choice. He told her that he brought her bad news. She was not with child; she had a tumor of the ovaries. He explained that he had studied in Edinburgh with some of the world's greatest surgeons, who had taught him that women with ovarian tumors must inevitably die; they could promise the patient nothing but two years of gradually increasing misery unless God worked a miracle. Some had wondered whether ovarian tumors might not be cured by cutting out the diseased part. The operation would be similar to spaying and animals recovered from being spayed. But no one dared to argue the point. Dr. McDowell pointed out that surgery was practically limited to the dressing of wounds and amputating limbs; operators did not dare invade the great cavities of the body. They believed that once the inner wall of the abdomen was exposed to the atmosphere, nothing could protect it from infection. During the hundred years in which excising tumors had been discussed no surgeon had ever dared hazard an operation, and so the patients always died in long-drawn-out agony. He knew the outcome if he tried and failed; his practice wiped out or even tried and judged guilty of murder. None the less he told his patient: "If you think you are prepared to die, I will take the lump from you if you will come to Danville."

A woman like Mrs. Crawford could never look heroic. Short, her naturally heavy body distorted by a tremendous tumor, her face marred by features too large and a long mouth too firmly set, she was a figure for pity, not romance. Yet there must have been a strange look in her gray eyes as she spoke quietly: "I will go with you." She said she would "hazard anything that held even the remote prospect of relief."

First there was the ride of sixty miles on horseback in mid-winter, but only in his home where his drugs, instruments and trained assistants were at hand, could he dare attempt the feat. The next day Mrs. Crawford was helped into the saddle, her huge tumor pressed against the pommel. A neighboring housewife accompanied her, since her husband had to care for the farm and the children. He watched the procession out of sight, certain he would never see his wife again. Each mile of travel brought increasing agony to Mrs. Crawford. At night they lodged with settlers along the trail. Always Mrs. Crawford was received with sympathy, and her doctor with suppressed indignation. Long before he reached Danville, McDowell must have begun to expect trouble from the mob.

At last the sixty miles were behind them and the doctor's wife had put Mrs. Crawford to bed. When the surgeon's nephew and partner heard what his uncle proposed to do, he refused to assist and continued to argue constantly against such madness. The proposed operation became the topic of the day in Danville and men began to say that McDowell must be stopped either by law or the people if need be.

He decided to operate on Christmas day, when the prayers of all the world, rising up to God, would create a propitious atmosphere. He engaged in extensive preparations, such as study of plates of the abdomen and rehearsing the operation with his apprentice.

Christmas day dawned with the ringing of bells. As soon as Dr. McDowell arose his nephew came and said he had determined to give his assistance. As Mrs. Crawford walked into the operating room the streets were quiet, for everyone was at church. One of the ministers was delivering a fiery sermon against the operation. The room was like any other room in the house except that it was bare but for a plain wooden table onto which Mrs. Crawford was strapped. The only known anaesthetic being a few opium pills, naturally she had to be fastened down. The surgeons waited in their ordinary clothes, their coats off and their sleeves rolled up. The knives and forceps had been washed and laid on an ordinary linen cover.

(To be Continued)

Military and Naval Section

In this section of the MONTHLY will appear regularly notices and announcements pertaining to the medical departments of the Army and Navy, the names of those who have been ordered to active duty, promotions, transfers, and other items of military medical interest.

Personnel of the boards before which the selectees appear follows:

Examining Physicians on Local Boards

ACCOMACK COUNTY No. 1, PARKSLEY

Dr. O. R. Fletcher, Sanford.
Dr. J. L. DeCormis, Accomac.
Dr. W. W. Kerns, Bloxom.

Dr. C. E. Critcher, New Church.

ACCOMACK COUNTY No. 2, ACCOMAC

Dr. R. J. White, Keller.
Dr. C. F. Gladstone, Tangier.

ALBEMARLE COUNTY, CHARLOTTESVILLE

Dr. R. G. Magruder, Charlottesville.
Dr. J. O. Mundy, Charlottesville.
Dr. T. E. Jones, Charlottesville.
Dr. F. D. Daniel, Charlottesville.

CHARLOTTESVILLE CITY, CHARLOTTESVILLE

Dr. Byrd S. Leavell, Charlottesville.
Dr. W. H. Paine, Charlottesville.
Dr. R. T. Ergenbright, Charlottesville.
Dr. Wm. H. Wood, Charlottesville.

ALLEGHANY COUNTY, COVINGTON

Dr. N. B. Jeter, Covington.

CLIFTON FORGE CITY, CLIFTON FORGE

Dr. R. L. Claterbaugh, Clifton Forge.

AMELIA COUNTY, AMELIA

Dr. J. L. Hamner, Mannboro.
Dr. J. T. O'Neal, Amelia.
Dr. H. C. Rucker, Mattoax.

AMHERST COUNTY, AMHERST

Dr. J. R. Saunders, Madison Heights.
Dr. M. M. Gratz, Amherst.
Dr. R. N. Hillsman, Amherst.
Dr. E. M. Sandidge, Amherst.
Dr. J. A. Drake, Monroe.

APPOMATTOX COUNTY, APPOMATTOX

Dr. D. A. Christian, Appomattox.

ARLINGTON COUNTY No. 1, ARLINGTON

Dr. J. H. Judson, Arlington.
Dr. Henry Bastien, Arlington.
Dr. S. T. Noland, Arlington.
Dr. T. A. Moneymaker, Arlington.
Dr. Alfred Palmer, Arlington.
Dr. William B. King, Arlington.
Dr. Roy Nicholson, Arlington.

ARLINGTON COUNTY No. 2, ARLINGTON

Dr. J. H. Walton, Arlington.
Dr. W. C. Welburne, Arlington.

ALEXANDRIA CITY, ALEXANDRIA

Dr. J. A. Gooch, Alexandria.

Dr. W. C. McCluer, Alexandria.

Dr. J. W. Love, Alexandria.

Dr. S. Novak, Alexandria.

Dr. G. Lemeschewsky, Alexandria.

Dr. C. E. Arnette, Alexandria.

Dr. H. B. Hutt, Alexandria.

Dr. N. Schuman, Alexandria.

Dr. R. Benthall, Alexandria.

AUGUSTA COUNTY No. 1, WAYNESBORO

Dr. H. B. Webb, Waynesboro.
Dr. A. M. McLaughlin, Waynesboro.
Dr. L. S. Booker, Waynesboro.
Dr. Sam Silver, Waynesboro.

AUGUSTA COUNTY No. 2, STAUNTON

Dr. B. H. Payne, Staunton.
Dr. T. W. Hankins, Fordwick.
Dr. H. G. Middlekauff, Weyers Cave.
Dr. Alex. Robertson, Staunton.
Dr. J. H. Guss, Churchville.

STAUNTON CITY, STAUNTON

Dr. C. P. Obenschain, Staunton.
Dr. C. F. Gaylord, Staunton.
Dr. Leland Brown, Staunton.

BATH COUNTY, WARM SPRINGS

Dr. H. C. Burrus, Hot Springs.
Dr. G. A. Torrence, Hot Springs.
Dr. M. Brown, Hot Springs.

BEDFORD COUNTY, BEDFORD

Dr. W. G. Hardy, Bedford.
Dr. M. V. Rucker, Bedford.
Dr. R. C. Anderson, Bedford.

BLAND COUNTY, BLAND

Dr. J. A. Wagner, Bland.
Dr. Harry Steinberg, Bastian.

BOTETOURT COUNTY, FINCASTLE

Dr. W. N. Breckinridge, Fincastle.

BRUNSWICK COUNTY, LAWRENCEVILLE

Dr. T. H. Anderson, Lawrenceville.
Dr. W. P. Baker, Alberta.
Dr. J. B. Vaiden, Lawrenceville.
Dr. C. F. Nelson, Lawrenceville.

BUCHANAN COUNTY, GRUNDY

Dr. Paul Bundy, Grundy.

BUCKINGHAM COUNTY, BUCKINGHAM

Dr. Garland Dyches, Dillwyn.

CAMPBELL COUNTY, RUSTBURG

Dr. W. O. Tune, Brookneal.
Dr. Otis Watkins, Rustburg.
Dr. J. Paul Kent, Altavista.
Dr. Q. H. Barney, Altavista.

LYNCHBURG CITY No. 1, LYNCHBURG

Dr. W. Clyde Adkerson, Lynchburg.
Dr. Powell Dillard, Lynchburg.

LYNCHBURG CITY No. 2, LYNCHBURG

Dr. H. L. Riley, Lynchburg.
Dr. John Hundley, Jr., Lynchburg.

CAROLINE COUNTY, BOWLING GREEN

Dr. Clarence Campbell, Sparta.

- Dr. John G. Broaddus, Bowling Green.
 Dr. R. B. Phillips, Bowling Green.
 Dr. Wm. Flegenheimer, Guinea.
 Dr. J. R. Travis, New London.
- CARROLL COUNTY, HILLSVILLE
 Dr. W. A. Porter, Hillsville.
- CHARLES CITY COUNTY, CHARLES CITY
 Dr. R. D. Garcin, Jr., R.F.D. 5, Richmond.
- CHARLOTTE COUNTY, CHARLOTTE C. H.
 Dr. W. R. Martin, Charlotte C. H.
 Dr. Wm. P. Terry, Charlotte C. H.
- CHESTERFIELD COUNTY, CHESTER
 Dr. James R. Parkinson, Chester.
- CLARKE COUNTY, BERRYVILLE
 Dr. C. H. Iden, Berryville
- CRAIG COUNTY, NEWCASTLE
 Dr. W. F. Mitchell, Newcastle.
- CULPEPER COUNTY, CULPEPER
 Dr. O. K. Burnette, Culpeper.
- CUMBERLAND COUNTY, CUMBERLAND C. H.
 Dr. Ernest Nuckols, Cumberland.
- DICKENSON COUNTY, CLINTWOOD
 Dr. Sandidge Evans, Clintwood.
 Dr. F. H. Yorkhoff, Clintwood.
 Dr. Rufus Phipps, Clintwood.
- DINWIDDIE COUNTY, DINWIDDIE
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 Dr. C. T. Jones, Petersburg.
 Dr. G. S. Fultz, Dinwiddie.
 Dr. R. H. Manson, McKenney.
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 Dr. H. M. Snead, Petersburg.
 Dr. J. E. Smith, Petersburg.
 Dr. G. H. Williams, Petersburg.
 Dr. J. A. Shields, Petersburg.
 Dr. L. F. Brown, Petersburg.
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 Dr. F. A. Kearney, Phoebus.
 Dr. A. T. Scott, Hampton.
 Dr. E. S. Jones, Hampton.
- HAMPTON CITY, HAMPTON
 Dr. Burl Bassette, Hampton.
 Dr. Willard Smith, Hampton.
 Dr. Paul Parker, Hampton.
 Dr. B. E. Hunt, Hampton.
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 Dr. F. B. Wilson, Tappahannock.
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 Dr. W. D. Chase, McLean.
 Dr. G. R. Carpenter, Fairfax.
 Dr. T. B. McCord, Fairfax.
 Dr. C. A. Finnigan, Falls Church.
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 Dr. J. E. Knight, Warrenton.
 Dr. W. G. Trow, Warrenton.
- FLOYD COUNTY, FLOYD
 Dr. F. C. Bedsaul, Floyd.
- FLUVANNA COUNTY, PALMYRA
 Dr. A. C. Whitley, Palmyra.
- FRANKLIN COUNTY, ROCKY MOUNT
 Dr. George Booth, Rocky Mount.
 Dr. W. H. Cobbs, Rocky Mount.
 Dr. E. C. Jamison, Rocky Mount.
- FREDERICK COUNTY, WINCHESTER
 Dr. B. B. Dutton, Winchester.
 Dr. Lewis Allen, Winchester.
- WINCHESTER CITY, WINCHESTER
 Dr. H. I. Pifer, Winchester.
 Dr. George G. Snarr, Winchester.
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 Dr. Walter Caudill, Pearisburg.
 Dr. Luther B. Lowe, Pearisburg.
 Dr. S. A. Tuck, Pembroke.
 Dr. H. G. Johnston, Pearisburg.
 Dr. M. C. Newton, Narrows.
- GLOUCESTER COUNTY, GLOUCESTER
 Dr. J. D. Clements, Ordinary.
- GOOCHLAND COUNTY, GOOCHLAND
 Dr. W. S. Lloyd, Goochland.
 Dr. H. H. Hines, State Farm.
- GRAYSON COUNTY, INDEPENDENCE
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 Dr. V. J. Cox, Galax.
 Dr. E. S. Elliott, Independence.
 Dr. V. O. Choate, Galax.
- GREENE COUNTY, STANARDSVILLE
 Dr. M. D. Foster, Stanardsville.
- GREENSVILLE COUNTY, EMPORIA
 Dr. C. W. Cartwright, Emporia.
 Dr. J. D. Kiser, Emporia.
 Dr. W. D. Joyner, Emporia.
- HALIFAX COUNTY No. 1, SOUTH BOSTON
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 Dr. W. R. Watkins, South Boston.
 Dr. I. K. Briggs, South Boston.
- HALIFAX COUNTY No. 2, SOUTH BOSTON
 Dr. A. P. Bohannon, Virgilina.
- HANOVER COUNTY, HANOVER C. H.
 Dr. E. T. Bray, Hanover.
- HENRICO COUNTY No. 1, RICHMOND
 Dr. H. Norton Mason, Richmond.
 Dr. E. L. Copley, Richmond.
- HENRICO COUNTY No. 2, RICHMOND
 Dr. F. P. Fletcher, Richmond.
 Dr. Herman Bailey, Sandston.
- RICHMOND CITY No. 1, RICHMOND
 Dr. H. W. Blanton, Richmond.
- RICHMOND CITY No. 2, RICHMOND
 Dr. Emmett C. Matthews, Richmond.
 Dr. Harold Goodman, Richmond.
 Dr. I. A. Jackson, Richmond.
- RICHMOND CITY No. 3, RICHMOND
 Dr. Felix J. Brown, Richmond.
 Dr. C. C. Trice, Richmond.
 Dr. Louis Lovenstein, Richmond.

RICHMOND CITY No. 4, RICHMOND

Dr. Robert G. Willis, Richmond.

RICHMOND CITY No. 5, RICHMOND

Dr. E. B. Singleton, Richmond.

Dr. E. L. Kellum, Richmond.

Dr. Gregory Shaed, Richmond.

Dr. Carl W. Meador, Richmond.

Dr. I. Rifkin, Richmond.

RICHMOND CITY No. 6, RICHMOND

Dr. L. B. Sheppard, Richmond.

Dr. B. W. Rawles, Sr., Richmond.

Dr. Carl W. LaFratta, Richmond.

RICHMOND CITY No. 7, RICHMOND

Dr. W. M. T. Forrester, Richmond.

Dr. E. B. Talbot, Richmond.

Dr. E. C. White, Richmond.

Dr. E. A. Delarue, Richmond.

Dr. R. F. Simms, Richmond.

Dr. L. T. Stoneburner, Jr., Richmond.

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Dr. T. N. Barnett, Richmond.

Dr. G. R. Maloney, Richmond.

Dr. J. P. Jones, Richmond.

HENRY COUNTY, MARTINSVILLE

Dr. R. H. Walker, Martinsville.

Dr. G. L. Jones, Martinsville.

Dr. M. M. Gordon, Martinsville.

MARTINSVILLE CITY, MARTINSVILLE

Dr. D. O. Baldwin, Martinsville.

Dr. E. M. McDaniel, Martinsville.

Dr. H. G. Hammond, Martinsville.

HIGHLAND COUNTY, MONTEREY

Dr. C. B. Fox, Monterey.

Dr. B. T. Swecker, Crabbottom.

ISLE OF WIGHT COUNTY, ISLE OF WIGHT

Dr. Tom Massey, Smithfield.

JAMES CITY COUNTY, TOANO

Dr. B. I. Bell, Williamsburg.

WILLIAMSBURG CITY, WILLIAMSBURG

Dr. Henry E. Davis, Williamsburg.

KING AND QUEEN COUNTY, KING AND QUEEN C. H.

Dr. R. D. Bates, Newtown.

KING GEORGE COUNTY, KING GEORGE C. H.

Dr. R. N. Harris, Port Royal.

KING WILLIAM COUNTY, KING WILLIAM C. H.

Dr. A. W. Lewis, Aylett.

Dr. W. S. Cox, West Point.

Dr. Hawes Campbell, Venter.

Dr. Paul C. Pearson, Aylett.

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Dr. M. C. Oldham, Kilmarnock.

LEE COUNTY No. 1, JONESVILLE

Dr. T. B. Ely, Jonesville.

LEE COUNTY No. 2, PENNINGTON GAP

Dr. J. H. Dellinger, Pennington Gap.

Dr. G. B. Setzler, Pennington Gap.

LOUDOUN COUNTY, LEESBURG

Dr. J. T. Jackson, Leesburg.

Dr. D. T. Saffer, Leesburg.

Dr. F. T. Hauser, Purcellville.

Dr. W. P. Frazer, Hamilton.

LOUISA COUNTY, LOUISA

Dr. E. B. Pendleton, Cuckoo.

Dr. H. S. Daniel, Louisa.

LUNENBURG COUNTY, LUNENBURG

Dr. W. D. Kendig, Kenbridge.

Dr. K. S. Freeman, Kenbridge.

MADISON COUNTY, MADISON C. H.

Dr. E. N. Lillard, Madison.

Dr. R. K. Butler, Madison.

MATHEWS COUNTY, MATHEW C. H.

Dr. J. R. Gill, Mathews.

MECKLENBURG COUNTY, BOYDTON

Dr. H. H. Braxton, Chase City.

Dr. G. N. Carter, Boydton.

Dr. L. H. Hoover, Clarksville.

Dr. W. J. Ozlin, South Hill.

MIDDLESEX COUNTY, SALUDA

Dr. H. F. Hoskins, Saluda.

MONTGOMERY COUNTY, CHRISTIANBURG

Dr. R. H. Grubbs, Christiansburg.

Dr. T. L. Gemmill, Radford.

Dr. H. L. Dean, Radford.

RADFORD CITY, RADFORD

Dr. J. L. Early, Radford.

NANSEMOND COUNTY, SUFFOLK

Dr. Ed. Joyner, Suffolk.

Dr. G. G. Holland, Holland.

Dr. C. W. Steel, Suffolk.

Dr. M. T. Plyler, Jr., Whaleyville.

SUFFOLK CITY, SUFFOLK

Dr. C. H. Dawson, Suffolk.

NELSON COUNTY, LOVINGSTON

Dr. E. C. Kidd, Lovingston.

Dr. J. F. Thaxton, Tye River.

NEW KENT COUNTY, NEW KENT

Dr. J. R. Parker, Providence Forge.

NORFOLK COUNTY No. 1, PORTSMOUTH

Dr. S. J. Tabor, Portsmouth.

NORFOLK COUNTY No. 2, PORTSMOUTH

Dr. T. E. Jones, Portsmouth.

Dr. G. W. Hayes, Portsmouth.

Dr. L. E. Mayo, Jr., Portsmouth.

Dr. J. R. St. George, Portsmouth.

SOUTH NORFOLK CITY, SOUTH NORFOLK

Dr. S. C. DeLaura, Norfolk.

Dr. J. M. Schoenfeld, Norfolk.

Dr. H. G. Ashburn, S. Norfolk.

NORFOLK CITY No. 1, NORFOLK

Dr. J. P. Bradshaw, Norfolk.

Dr. A. Burke, Norfolk.

Dr. M. S. Andrews, Norfolk.

Dr. H. W. Rogers, Norfolk.

NORFOLK CITY No. 2, NORFOLK

Dr. J. W. Anderson, Norfolk.

Dr. A. G. Horton, Norfolk.

- Dr. R. B. Grinnan, Jr., Norfolk.
Dr. N. F. Rodman, Norfolk.
- NORFOLK CITY No. 3, NORFOLK
Dr. W. A. Porter, Norfolk.
Dr. M. S. Fitchett, Norfolk.
Dr. C. L. Harrell, Norfolk.
Dr. Foy Vann, Norfolk.
Dr. R. A. Gay, Norfolk.
Dr. M. R. Whitehill, Norfolk.
- NORFOLK CITY No. 4, NORFOLK
Dr. W. P. Adams, Norfolk.
Dr. C. C. Smith, Norfolk.
Dr. C. M. McCoy, Norfolk.
Dr. W. P. Sellers, Norfolk.
- NORFOLK CITY No. 5, NORFOLK
Dr. B. R. Kennon, Norfolk.
Dr. N. G. Wilson, Norfolk.
Dr. B. D. Jones, Norfolk.
Dr. F. C. Rinker, Norfolk.
- PORTSMOUTH CITY No. 1, PORTSMOUTH
Dr. E. T. Glover, Portsmouth.
Dr. S. B. Moore, Portsmouth.
Dr. Vernon Brooks, Portsmouth.
- PORTSMOUTH CITY No. 2, PORTSMOUTH
Dr. R. M. Cox, Portsmouth.
Dr. L. A. McAlpin, Portsmouth.
Dr. G. H. Carr, Jr., Portsmouth.
- NORTHAMPTON COUNTY, EASTVILLE
Dr. E. H. Trower, Eastville.
- NORTHUMBERLAND COUNTY, HEATHSVILLE
Dr. W. B. Richardson, Heathsville.
Dr. M. M. Neale, Heathsville.
- NOTTOWAY COUNTY, NOTTOWAY
Dr. J. M. Hurt, Blackstone.
Dr. J. A. B. Lowry, Crewe.
- ORANGE COUNTY, ORANGE
Dr. O. N. Shelton, Orange.
Dr. Lewis Holladay, Orange.
Dr. G. R. Elliott, Orange.
Dr. W. R. Warren, Woodberry Forest.
- PAGE COUNTY, LURAY
Dr. E. G. Brumback, Luray.
Dr. F. T. Amiss, Luray.
Dr. G. H. Long, Luray.
- PATRICK COUNTY, STUART
Dr. B. A. Hopkins, Stuart.
Dr. W. N. Thompson, Stuart.
- PITTSYLVANIA COUNTY No. 1, CHATHAM
Dr. H. H. Hammer, Chatham.
- PITTSYLVANIA COUNTY No. 2, CHATHAM
Dr. J. T. Daves, Danville.
Dr. A. M. Owen, Gretna.
Dr. J. C. Anderson, Chatham.
Dr. H. A. Wiseman, Jr., Danville.
Dr. G. V. Thompson, Chatham.
- PITTSYLVANIA COUNTY No. 3, SCHOOLFIELD
Dr. J. J. Neal, Danville.
Dr. J. M. Robinson, Danville.
Dr. Lawrence Crumpler, Danville.
- Dr. E. W. Arnett, Danville.
Dr. H. R. Bourne, Danville.
- DANVILLE CITY, DANVILLE
Dr. D. L. Arey, Danville.
Dr. P. W. Miles, Danville.
- POWHATAN COUNTY, POWHATAN C. H.
Dr. O. H. Whitlock, Powhatan.
Dr. H. C. Rucker, Mattoax.
- PRINCE EDWARD COUNTY, FARMVILLE
Dr. T. G. Hardy, Farmville.
- PRINCE GEORGE COUNTY, PRINCE GEORGE
Dr. R. T. Hawks, Carson.
Dr. Francis Taylor, Petersburg.
Dr. F. J. Wright, Jr., Petersburg.
- HOPEWELL CITY, HOPEWELL
Dr. O. L. Jones, Hopewell.
Dr. C. A. Robbins, Hopewell.
Dr. L. S. Barksdale, Hopewell.
- PRINCESS ANNE COUNTY, PRINCESS ANNE C. H.
Dr. R. E. Whitehead, R.F.D., Norfolk.
- PRINCE WILLIAM COUNTY, MANASSAS
Dr. Stewart McBryde, Manassas.
- PULASKI COUNTY, PULASKI
Dr. W. I. Owen, Pulaski.
- RAPPAHANNOCK COUNTY, WASHINGTON
Dr. J. P. Snead, Sperryville.
- RICHMOND COUNTY, WARSAW
Dr. J. H. Hare, Warsaw.
- ROANOKE COUNTY No. 1, SALEM
Dr. E. W. Senter, Salem.
Dr. J. C. Darden, Salem.
Dr. R. B. Smiley, Salem.
- ROANOKE COUNTY No. 2, SALEM
Dr. R. H. Newman, Vinton.
Dr. J. L. Kinzie, Salem.
Dr. R. B. Williams, Salem.
- ROANOKE CITY No. 1, ROANOKE
Dr. T. D. Armistead, Roanoke.
Dr. J. D. Willis, Roanoke.
Dr. E. F. Flora, Roanoke.
- ROANOKE CITY No. 2, ROANOKE
Dr. John O. Boyd, Roanoke.
Dr. J. H. Roberts, Roanoke.
Dr. J. B. Clayton, Roanoke.
Dr. W. O. Porter, Roanoke.
- ROANOKE CITY No. 3, ROANOKE
Dr. G. W. Hooker, Roanoke.
Dr. J. H. Bailey, Roanoke.
Dr. K. D. Graves, Roanoke.
Dr. B. P. Seward, Roanoke.
Dr. L. C. Downing, Roanoke.
- ROCKBRIDGE COUNTY, LEXINGTON
Dr. O. H. McClung, Lexington.
Dr. F. M. Leech, Lexington.
Dr. E. V. Brush, Lexington.
- BUENA VISTA CITY, BUENA VISTA
Dr. Marshall Vaden, Buena Vista.
Dr. R. R. Eason, Buena Vista.

ROCKINGHAM COUNTY, HARRISONBURG

Dr. B. S. Yancey, Harrisonburg.

HARRISONBURG CITY, HARRISONBURG

Dr. Joe Ney, Harrisonburg.

Dr. John Biedler, Harrisonburg.

RUSSELL COUNTY, LEBANON

Dr. W. C. Elliott, Lebanon.

SCOTT COUNTY, GATE CITY

Dr. W. L. Griggs, Gate City.

Dr. F. G. McConnell, Gate City.

Dr. S. P. Gardner, Gate City.

SHENANDOAH COUNTY, WOODSTOCK

Dr. H. W. Miller, Woodstock.

SMYTH COUNTY, MARION

Dr. R. H. Harrington, Marion.

SOUTHAMPTON COUNTY, COURTLAND

Dr. T. Addison Morgan, Franklin.

SPOTSYLVANIA COUNTY, SPOTSYLVANIA

Dr. T. B. Payne, Fredericksburg.

Dr. F. T. Cassidy, Fredericksburg.

FREDERICKSBURG CITY, FREDERICKSBURG

Dr. R. C. Ellison, Fredericksburg.

Dr. Frank Pratt, Fredericksburg.

Dr. G. B. Harrison, Fredericksburg.

STAFFORD COUNTY, STAFFORD C. H.

Dr. J. C. Gordon, Stafford C. H.

Dr. J. McL. Jackson, Manassas.

SURRY COUNTY, SURRY

Dr. B. H. Knight, Surry.

SUSSEX COUNTY, SUSSEX C. H.

Dr. R. B. McEwen, Wakefield.

TAEZEWELL COUNTY No. 1, TAEZEWELL

Dr. M. B. Crockett, Tazewell.

Dr. J. M. Higginbotham, Tazewell.

Dr. J. W. Witten, Tazewell.

Dr. J. P. Williams, Richlands.

Dr. Joseph Robinson, Richlands.

TAEZEWELL COUNTY No. 2, BLUEFIELD

Dr. H. H. Ballard, Pocahontas.

Dr. H. A. Porter, Boissevain.

Dr. H. C. Davis, Bluefield.

WARREN COUNTY, FRONT ROYAL

Dr. O. W. Carper, Front Royal.

Dr. J. W. Clarke, Front Royal.

WARWICK COUNTY, DENBIGH

Dr. E. W. Buckingham, Newport News.

Dr. G. C. Amory, Hilton Village.

Dr. J. T. Tankard, Hilton Village.

Dr. C. T. Lawford, Hilton Village.

NEWPORT NEWS CITY No. 1, NEWPORT NEWS

Dr. T. N. Hunnicutt, Jr., Newport News.

Dr. E. Bruce Mewborne, Newport News.

Dr. Frank H. Zack, Newport News.

Dr. J. E. Fissel, Newport News.

NEWPORT NEWS CITY No. 2, NEWPORT NEWS

Dr. J. E. Marable, Newport News.

Dr. E. D. Blechman, Newport News.

WASHINGTON COUNTY No. 1, ABINGDON

Dr. J. A. Wolfe, Abingdon.

Dr. G. H. Wolfe, Abingdon.

Dr. E. D. Rollins, Bristol.

Dr. J. M. Boykin, Bristol.

WASHINGTON COUNTY No. 2, ABINGDON

Dr. Mike Hines, Abingdon.

BRISTOL CITY, BRISTOL

Dr. P. D. Stout, Bristol.

Dr. A. K. Turner, Bristol.

Dr. W. M. Gammon, Bristol.

WESTMORELAND COUNTY, MONTROSS

Dr. E. T. Ames, Montross.

WISE COUNTY No. 1, NORTON

Dr. E. P. Cox, Norton.

Dr. C. R. Jones, Dorchester.

WISE COUNTY No. 2, BIG STONE GAP

Dr. Milton Milman, Stonega.

Dr. R. S. Kyle, Big Stone Gap.

Dr. W. B. Barton, Stonega.

Dr. F. E. Handy, Appalachia.

Dr. W. B. Peters, Appalachia.

WYTHE COUNTY, WYTHEVILLE

Dr. C. D. Moore, Wytheville.

Dr. E. M. Chitwood, Wytheville.

Dr. M. B. Caldwell, Wytheville.

YORK COUNTY, YORKTOWN

Dr. W. W. Fuller, Williamsburg.

Dr. M. W. Crafford, Lee Hall.

Medical Advisory Boards and Local Boards Served

No. 1—ACCOMACK COUNTY

Dr. John Robertson, *Chairman*, Onancock.

Dr. J. C. Doughty, Onancock.

Dr. George Fosque, Onancock.

Dr. B. N. Mears, Belle Haven.

Dr. George R. Sledge, Parksley.

Dr. Warren P. Lewis, Parksley.

No. 2—NORTHAMPTON COUNTY

Dr. S. K. Ames, *Chairman*, Cape Charles.

Dr. William T. Green, Cape Charles.

Dr. James M. Lynch, Cape Charles.

Dr. W. B. Trower, Cape Charles.

Dr. J. G. Goode, Cheriton.

Dr. E. T. Stevens, Cape Charles.

Dr. W. C. Henderson, Nassawadox.

No. 3—NORFOLK AND PRINCESS ANN COUNTIES AND CITY OF PORTSMOUTH

Dr. Wm. A. Brown, Jr., *Chairman*, Portsmouth.

Dr. George Oast, Portsmouth.

Dr. Fred Barrow, Portsmouth.

Dr. J. W. Abbitt, Portsmouth.

Dr. M. H. Hood, Portsmouth.

Dr. W. H. Haller, Portsmouth.

No. 4—SUFFOLK CITY, NANSEMOND AND ISLE OF WIGHT COUNTIES

Dr. David Rawls, *Chairman*, Suffolk.

Dr. L. W. White, Suffolk.

Dr. O. R. Yates, Suffolk.

Dr. W. T. Gay, Suffolk.

Dr. T. Wood Campbell, Suffolk.

Dr. W. C. Gibson, Suffolk.

No. 5—SOUTHAMPTON AND GREENSVILLE COUNTIES

Dr. J. C. Rawls, *Chairman*, Franklin.
 Dr. Rufus L. Raiford, Franklin.
 Dr. W. T. McLemore, Courtland.
 Dr. Morgan B. Raiford, Franklin.
 Dr. A. P. Cutchin, Franklin.
 Dr. T. Addison Morgan, Franklin.
 Dr. Beaman Story, Franklin.
 Dr. L. P. Jones, Emporia.

No. 6—MECKLENBURG, BRUNSWICK AND LUNENBURG COUNTIES

Dr. H. B. Showalter, *Chairman*, Kenbridge.
 Dr. Harry E. Whaley, Victoria.
 Dr. W. D. Kendig, Kenbridge.
 Dr. A. T. Finch, Jr., Chase City.
 Dr. H. H. Braxton, Chase City.
 Dr. L. H. Bracey, South Hill.
 Dr. W. T. Dodd, Chase City.
 Dr. R. S. Montgomery, South Hill.

No. 7—HALIFAX AND CHARLOTTE COUNTIES

Dr. W. C. Brann, *Chairman*, South Boston.
 Dr. Wm. R. Watkins, South Boston.
 Dr. I. K. Briggs, South Boston.
 Dr. D. C. Steelsmith, South Boston.
 Dr. W. L. Eastlack, South Boston.
 Dr. R. F. Gayle, Richmond.

No. 8—PRINCE EDWARD AND CUMBERLAND COUNTIES

Dr. Ray A. Moore, *Chairman*, Farmville.
 Dr. J. H. Smith, Farmville.
 Dr. W. E. Smith, Farmville.
 Dr. H. B. Holsinger, Farmville.
 Dr. Powell Tynes, Farmville.
 Dr. H. C. Alexander, Farmville.

No. 9—NOTTOWAY AND AMELIA COUNTIES

Dr. Charles L. York, *Chairman*, Burkeville.
 Dr. John A. Proffitt, Burkeville.
 Dr. J. R. Bailey, Keysville.
 Dr. J. B. Woodson, Burkeville.
 Dr. J. M. Habel, Jetersville.
 Dr. John P. Irby, Jr., Blackstone.

No. 10—DINWIDDIE COUNTY AND CITY OF PETERSBURG

Dr. M. C. Edmunds, *Chairman*, Petersburg.
 Dr. Edgar W. Young, Petersburg.
 Dr. John M. Williams, Petersburg.
 Dr. Claiborne T. Jones, Petersburg.
 Dr. E. L. McGill, Petersburg.
 Dr. Fred Gill, Petersburg.
 Dr. Wright Clarkson, Petersburg.
 Dr. M. S. Brent, Petersburg.

No. 11—PRINCE GEORGE COUNTY AND CITY OF HOPEWELL

Dr. T. E. Armstrong, *Chairman*, Hopewell.
 Dr. S. B. Perry, Hopewell.
 Dr. J. C. Bodow, Hopewell.
 Dr. F. M. Howell, Hopewell.
 Dr. W. M. Phipps, Hopewell.
 Dr. J. E. Keeley, Hopewell.

No. 12—SURRY AND SUSSEX COUNTIES

Dr. T. M. Raines, *Chairman*, Wakefield.
 Dr. T. S. Jennings, Waverly.

Dr. T. F. Jarratt, Jarratt.

Dr. E. C. Nettles, Waverly.

No. 13—ELIZABETH CITY AND WARWICK COUNTIES AND CITIES OF HAMPTON AND NEWPORT NEWS

Dr. Russell Buxton, *Chairman*, Newport News.
 Dr. H. N. King, Kecoughtan.
 Dr. Geo. G. Hankins, Newport News.
 Dr. F. N. Thompson, Newport News.
 Dr. T. N. Hunnicutt, Newport News.
 Dr. E. J. Applewhite, Newport News.

No. 13-A—JAMES CITY AND YORK COUNTIES AND CITY OF WILLIAMSBURG

Dr. Geo. W. Brown, *Chairman*, Williamsburg.
 Dr. T. B. Henderson, Williamsburg.
 Dr. C. E. Holderby, Williamsburg.
 Dr. B. I. Bell, Williamsburg.
 Dr. E. T. Terrell, Williamsburg.
 Dr. J. R. Tucker, Williamsburg.
 Dr. Henry M. Stryker, Williamsburg.
 Dr. P. G. Hamlin, Williamsburg.

No. 14—HENRICO, CHESTERFIELD, CHARLES CITY, NEW KENT, HANOVER, GOOCHLAND AND POWHATAN COUNTIES, AND CITY OF RICHMOND

Dr. Clifton M. Miller, *Chairman*, Richmond.
 Dr. J. B. Fisher, Midlothian.
 Dr. J. T. Tucker, Richmond.
 Dr. Beverley R. Tucker, Richmond.
 Dr. D. D. Talley, Richmond.
 Dr. A. L. Herring, Richmond.
 Dr. Guy Harrison, Richmond.
 Dr. J. M. Hutcheson, Richmond.

No. 15—ESSEX, KING AND QUEEN AND KING WILLIAM COUNTIES

Dr. J. M. Gouldin, *Chairman*, Tappahannock.
 Dr. H. B. Bristow, Tappahannock.
 Dr. F. B. Wilson, Tappahannock.
 Dr. R. D. Bates, Newtown.
 Dr. A. L. Van Name, Center Cross.
 Dr. James Shepherd, Tappahannock.

No. 16—MIDDLESEX, GLOUCESTER AND MATHEWS COUNTIES

Dr. N. D. Nelms, *Chairman*, Mathews.
 Dr. John Gill, Mathews.
 Dr. James Haynes, Mathews.
 Dr. Harry A. Tabb, Gloucester.
 Dr. J. M. Wiatt, Gloucester.
 Dr. W. P. Jones, Urbanna.

No. 17—LANCASTER AND NORTHUMBERLAND COUNTIES

Dr. Lee Liggan, *Chairman*, Irvington.
 Dr. M. C. Oldham, Kilmarnock.
 Dr. E. R. Lilly, Kilmarnock.
 Dr. L. E. Cockrell, Reedville.
 Dr. Paul K. Candler, Reedville.
 Dr. Foushee O. Mooklar, Reedville.

No. 18—WESTMORELAND AND RICHMOND COUNTIES

Dr. V. O. Caruthers, *Chairman*, Colonial Beach.
 Dr. V. L. Litsinger, Farnham.
 Dr. A. L. Phillips, Alexandria.
 Dr. Thos. W. Murrell, Richmond.

No. 19—CITY OF FREDERICKSBURG, AND SPOTSYLVANIA, STAFFORD, KING GEORGE AND CAROLINE COUNTIES

Dr. Thos. W. Dew, *Chairman*, Fredericksburg.
 Dr. J. M. Holloway, Fredericksburg.
 Dr. Robt. J. Payne, Stafford.
 Dr. C. A. Nunnally, Fredericksburg.
 Dr. John E. Cole, Fredericksburg.
 Dr. Andrew J. Bolling, Jr., Fredericksburg.
 Dr. N. Talley Ballou, Jr., Fredericksburg.
 Dr. James Asa Shield, Richmond.

No. 20—ORANGE AND LOUISA COUNTIES

Dr. Otis N. Shelton, *Chairman*, Orange.
 Dr. W. R. Warren, Orange.
 Dr. J. P. Hankins, Orange.
 Dr. G. R. Elliott, Orange.
 Dr. Marvin Harris, Orange.

No. 21—CULPEPER, MADISON AND RAPPAHANNOCK COUNTIES

Dr. J. L. Stringfellow, *Chairman*, Culpeper.
 Dr. D. W. Kelly, Culpeper.
 Dr. Granville Eastham, Culpeper.
 Dr. O. K. Burnette, Culpeper.
 Dr. Hugh T. Chelf, Culpeper.
 Dr. W. G. Palmer, Culpeper.

No. 22—FAUQUIER COUNTY

Dr. Geo. H. Davis, *Chairman*, Warrenton.
 Dr. W. G. Trow, Warrenton.
 Dr. W. R. Pretlow, Warrenton.
 Dr. J. Frank Folk, Warrenton.
 Dr. J. E. Knight, Warrenton.
 Dr. W. N. Hodgin, Warrenton.

No. 23—CITY OF ALEXANDRIA, AND FAIRFAX, PRINCE WILLIAM AND ARLINGTON COUNTIES

Dr. L. F. Hobbs, *Chairman*, Alexandria.
 Dr. M. D. Delaney, Alexandria.
 Dr. Herbert Wolff, Alexandria.
 Dr. H. A. Latane, Alexandria.
 Dr. S. H. Williams, Alexandria.
 Dr. J. T. Ashton, Alexandria.
 Dr. Wm. T. Burch, Alexandria.
 Dr. James W. Love, Alexandria.

No. 24—LOUDOUN COUNTY

Dr. M. B. Hiden, *Chairman*, Leesburg.
 Dr. John A. Gibson, Leesburg.
 Dr. J. T. Jackson, Leesburg.
 Dr. Geo. H. Musgrave, Leesburg.
 Dr. W. P. Frazer, Hamilton.
 Dr. F. P. Smoot, Leesburg.
 Dr. W. O. Bailey, Leesburg.

No. 25—CITY OF WINCHESTER, AND FREDERICK AND CLARKE COUNTIES

Dr. P. W. Boyd, *Chairman*, Winchester.
 Dr. Hunter H. McGuire, Winchester.
 Dr. James A. Miller, Winchester.
 Dr. Geo. H. Smith, Winchester.
 Dr. J. B. McKee, Winchester.
 Dr. Frank E. Tappan, Berryville.

No. 26—SHENANDOAH AND WARREN COUNTIES

Dr. Frank Gearing, *Chairman*, Woodstock.
 Dr. J. T. Rountree, Woodstock.
 Dr. Harold W. Miller, Woodstock.

Dr. James H. Smoot, Woodstock.
 Dr. W. H. Wunder, Woodstock.
 Dr. C. E. Foley, Front Royal.

No. 27—CITY OF HARRISONBURG, AND ROCKINGHAM AND PAGE COUNTIES

Dr. C. E. Conrad, *Chairman*, Harrisonburg.
 Dr. F. L. Byers, Harrisonburg.
 Dr. N. M. Canter, Harrisonburg.
 Dr. John E. Wine, Harrisonburg.
 Dr. H. G. Preston, Harrisonburg.
 Dr. Marvin D. Switzer, Harrisonburg.
 Dr. Jos. L. Wright, Harrisonburg.

No. 28—AUGUSTA, ROCKBRIDGE AND HIGHLAND COUNTIES, AND CITIES OF STAUNTON AND BUENA VISTA

Dr. W. A. Murphy, *Chairman*, Staunton.
 Dr. Richard P. Bell, Staunton.
 Dr. W. M. Phelps, Staunton.
 Dr. Guy Fisher, Staunton.
 Dr. Glenn Campbell, Staunton.
 Dr. H. E. Topping, Staunton.
 Dr. James B. Pettis, Staunton.

No. 29—CITY OF CHARLOTTESVILLE, AND ALBEMARLE, NELSON, BUCKINGHAM, FLUVANNA AND GREENE COUNTIES

Dr. H. S. Hedges, *Chairman*, Charlottesville.
 Dr. David C. Wilson, Charlottesville.
 Dr. William E. Brown, Sanatorium.
 Dr. A. D. Hart, Charlottesville.
 Dr. V. W. Archer, Charlottesville.
 Dr. D. C. Smith, Charlottesville.
 Dr. Harry L. Smith, Charlottesville.
 Dr. G. S. Fitz-Hugh, Charlottesville.
 Dr. E. P. Lehman, Charlottesville.
 Dr. R. V. Funsten, Charlottesville.

No. 30—CAMPBELL, BEDFORD, APPOMATTOX AND AMHERST COUNTIES AND THE CITY OF LYNCHBURG

Dr. David P. Scott, *Chairman*, Lynchburg.
 Dr. George B. Arnold, Colony.
 Dr. Elisha Barksdale, Lynchburg.
 Dr. B. H. Kyle, Lynchburg.
 Dr. S. H. Rosenthal, Lynchburg.
 Dr. Sam Wilson, Lynchburg.
 Dr. T. E. Rucker, Lynchburg.
 Dr. Robt. P. Stickley, Lynchburg.
 Dr. J. R. Gorman, Lynchburg.
 Dr. Walter Thornton, Lynchburg.

No. 31—ROANOKE, BOTETOURT AND FRANKLIN COUNTIES, AND ROANOKE CITY

Dr. John W. Preston, *Chairman*, Roanoke.
 Dr. W. Allen Barker, Roanoke.
 Dr. S. B. Cary, Roanoke.
 Dr. E. G. Gill, Roanoke.
 Dr. R. M. Hoover, Roanoke.
 Dr. Wm. R. Whitman, Roanoke.
 Dr. Leon J. Walton, Roanoke.
 Dr. L. F. Verdel, Roanoke.
 Dr. Walter Manley, Roanoke.

No. 32—CITY OF CLIFTON FORGE AND COUNTIES OF ALLEGHANY, CRAIG AND BATH

Dr. J. M. Emmett, *Chairman*, Clifton Forge.
 Dr. W. M. Revercomb, Clifton Forge.

Dr. A. D. Tyree, Clifton Forge.
 Dr. Courtney Edmond, Clifton Forge.
 Dr. W. P. Gilmer, Clifton Forge.
 Dr. W. H. Savage, Clifton Forge.

No. 33—PITTSYLVANIA COUNTY AND CITY OF DANVILLE

Dr. C. L. Bailey, *Chairman*, Danville.
 Dr. H. R. Bourne, Danville.
 Dr. B. H. Carpenter, Danville.
 Dr. W. B. Fowlkes, Danville.
 Dr. S. C. Hall, Danville.
 Dr. W. O. Hankins, Danville.
 Dr. E. E. Barksdale, Danville.
 Dr. M. H. Watson, Danville.

No. 34—CITY OF MARTINSVILLE AND HENRY AND PATRICK COUNTIES

Dr. J. A. Shackelford, *Chairman*, Martinsville.
 Dr. F. B. Teague, Martinsville.
 Dr. G. B. Dudley, Martinsville.
 Dr. G. C. Hughes, Martinsville.
 Dr. Robt. R. Lee, Martinsville.
 Dr. J. P. Scott, Martinsville.
 Dr. H. V. Price, Martinsville.
 Dr. C. R. Titus, Bassetts.

No. 35—MONTGOMERY AND FLOYD COUNTIES AND CITY OF RADFORD

Dr. J. J. Giesen, *Chairman*, Radford.
 Dr. R. M. DeHart, Christiansburg.
 Dr. H. D. Fitzpatrick, Radford.
 Dr. E. G. Hall, Radford.
 Dr. James King, Radford.
 Dr. W. G. Hylton, Radford.

No. 36—PULASKI, CARROLL AND GILES COUNTIES

Dr. R. F. Thornhill, *Chairman*, Pulaski.
 Dr. W. F. Delph, Pulaski.
 Dr. R. H. Woolling, Pulaski.
 Dr. William S. Gilmer, Pulaski.
 Dr. R. O. Smith, Pulaski.

No. 37—WYTHE AND BLAND COUNTIES

Dr. C. F. Graham, *Chairman*, Wytheville.
 Dr. J. F. Repass, Wytheville.
 Dr. C. D. Moore, Wytheville.
 Dr. M. B. Caldwell, Wytheville.
 Dr. E. S. Berlin, Wytheville.
 Dr. J. B. Haller, Wytheville.

No. 38—SMYTH AND GRAYSON COUNTIES

Dr. R. D. Campbell, *Chairman*, Saltville.
 Dr. J. A. Soyars, Saltville.
 Dr. T. K. McKee, Saltville.
 Dr. W. H. McCarty, Marion.
 Dr. Geo. A. Wright, Marion.
 Dr. R. H. Harrington, Marion.
 Dr. J. E. Baughman, Marion.
 Dr. J. M. Graybeal, Marion.

No. 39—TAZEWELL AND BUCHANAN COUNTIES

Dr. W. R. Williams, *Chairman*, Richlands.
 Dr. I. W. Cunningham, Richlands.
 Dr. Linwood Farley, Richlands.
 Dr. J. W. Houck, Richlands.
 Dr. A. D. Parson, Richlands.

Dr. J. B. Sanders, Richlands.
 Dr. Joseph E. Barrett, Marion.

No. 40—WASHINGTON COUNTY AND CITY OF BRISTOL

Dr. H. M. Hayter, *Chairman*, Abingdon.
 Dr. L. F. Cosby, Abingdon.
 Dr. G. H. Wolfe, Abingdon.
 Dr. W. R. Cline, Abingdon.
 Dr. W. H. McCarty, Marion.
 Dr. H. W. Smeltzer, Abingdon.

No. 41—DICKENSON AND RUSSELL COUNTIES

Dr. Hugh Griffin, *Chairman*, Dante.
 Dr. L. C. McNeer, Dante.
 Dr. G. W. Skaggs, Dante.
 Dr. E. P. Whited, Honaker.
 Dr. J. H. Lockhart, Honaker.

No. 42—LEE, SCOTT AND WISE COUNTIES

Dr. G. W. Botts, *Chairman*, Norton.
 Dr. W. B. Barton, Stonega.
 Dr. C. B. Bowyer, Stonega.
 Dr. E. F. Kaye, Stonega.
 Dr. J. J. Porter, Norton.
 Dr. T. J. Tudor, Norton.

No. 43—CITY OF NORFOLK

Dr. R. L. Payne, *Chairman*, Norfolk.
 Dr. Clayton W. Eley, Norfolk.
 Dr. C. C. Cooley, Norfolk.
 Dr. George Duncan, Norfolk.
 Dr. A. B. Hodges, Norfolk.
 Dr. R. F. Simmons, Norfolk.
 Dr. James W. Anderson, Norfolk.
 Dr. Frank H. Redwood, Norfolk.

Induction Boards

The following is a list of the physicians who have or are serving on the Medical Examining Board for the Induction Station in Richmond, Va., from November 28, 1940:

Col. John A. Clark, Medical Corps, U. S. A. in charge.

Dr. W. Lowndes Peple (Surgery and Orthopedics).

Dr. James H. Smith (Internist).

Dr. Wyndham B. Blanton (Internist).

Dr. John Bell Williams (Dentist).

Dr. Robert H. Courtney (Ophthalmologist).

Dr. James Asa Shield (Psychiatrist).

Dr. Edward H. Williams (Psychiatrist).

Dr. William Linwood Ball (Internist).

Dr. Benjamin W. Rawles, Jr. (Surgeon).

Dr. George N. Thrift (Otorhinolaryngologist).

Dr. Fred M. Hodges (Roentgenologist).

Dr. Lawrence O. Snead (Roentgenologist).

Dr. J. Lloyd Tabb (Roentgenologist).

Dr. E. Latane Flanagan ((Roentgenologist)

Dr. J. Hamilton Scherer (Pathologist).

Additions since include:

Dr. Alton D. Brashear (Dentist).

Dr. L. Benjamin Sheppard (Ophthalmologist).

Dr. Walter J. Rein (Ophthalmologist).

Dr. M. Morris Pinckney (Internist).

Dr. Philip W. Oden (Surgeon).

Dr. Kinloch Nelson (Internist).

Dr. Emmett C. Matthews (Internist).
 Dr. Edgar Childrey (Ophthalmologist).
 Those serving the Induction Station at Roanoke, Va.:
 Capt. Joseph M. Dixon, Medical Corps, U. S. A. in charge.
 Dr. E. M. Landis (Internist).
 Dr. E. P. Lehman (Surgeon).
 Dr. Bernard H. Kyle (Orthopedist).
 Dr. Harry B. Stone, Sr. (Ophthalmologist).
 Dr. Fletcher D. Woodward (Otorhinolaryngologist).
 Dr. J. R. Blalock (Neuropsychiatrist).
 Dr. F. A. Strickler (Neuropsychiatrist).
 Dr. June U. Gunter (Pathologist).
 Dr. J. E. John (Dentist).
 Dr. H. B. Mulholland (Internist).
 Dr. Prentice Kiser (Orthopedist).
 Dr. Jason Crigler (Ophthalmologist).
 Dr. C. T. Burton (Otolaryngologist).
 Dr. Dave Massey (Dentist).
 Dr. Roy N. Hoover (Orthopedist).

National Guard Officers

The following medical officers in the National Guard of Virginia have been called into service for an indefinite period:

Lt. Col. Ernest T. Trice, Richmond—State Staff.
 Major Wilbur R. Southward, Jr., Richmond—Ft. Meade, Md.
 Major Richard A. Bowen, II, Richmond—Ft. Meade, Md.
 Major Lewis C. Lush, Richmond—Ft. Meade, Md.
 Major Harry F. White, Staunton—Ft. Meade, Md.
 Major Frederick P. Barrow, II, Portsmouth—Ft. Meade, Md.
 Major Ira H. Hurt, Roanoke—Ft. Story, Va.
 Captain Garnett W. Johnson, Danville—Ft. Meade, Md.
 Captain Millard R. Buckley, Richmond—Ft. Meade, Md.
 Captain Holcombe H. Hurt, Lynchburg—Ft. Story, Va.
 Captain Charles F. Davis, Jr., Roanoke—Ft. Story, Va.
 Lieut. Herbert G. Ruffin, Arvonnia—Ft. Meade, Md.
 Lieut. Robley C. Allison, Petersburg—Ft. Meade, Md.
 Lieut. Hugh B. Brown, Jr., Draper—Ft. Meade, Md.
 Lieut. Rupert W. Powell, Roanoke—Ft. Meade, Md.
 Lieut. Oswald M. Weaver, Colony—Ft. Meade, Md.
 Lieut. John C. Risher, Lynchburg—Ft. Story, Va.
 Lieut. John C. Palmer, Radford—Ft. Story, Va.

Medical Reserve Officers

The following Virginia Medical Reserve officers have been ordered to extended active duty with the regular army by the commanding general of the Third Corps Area:

Lt. Col. George Brooks West, Norfolk.
 Lt. Col. Milton Buell Coffman, Richmond—Washington, D. C.
 Major Thomas Latane Driscoll, Columbia.
 Major George A. L. Kolmer, Salem—Carlisle Barracks, Pa.
 Capt. Joseph M. Dixon, Roanoke.
 Capt. Wm. Russell Bishop, Flint Hill.
 Capt. Henry G. Steinmetz, Arlington.
 Capt. Grant R. Elliott, Orange—Camp Blanding, Fla.

Capt. Ayer Crouch Whitley, Palmyra—Camp Shelby, Miss.
 Capt. Wm. Holmes Chapman, Suffolk—Ft. Eustis, Va.
 Capt. Thomas Duval Watts, Richmond—Ft. Meade, Md.
 Capt. Jos. Edwin Cox, Waynesboro—Ft. Story, Va.
 Capt. Roger Gregory Magruder, Charlottesville—Langley Field, Va.
 Capt. Nathan Sharove, Richmond—Camp Lee, Va.
 Capt. Jas. Franklin Waddill, Norfolk—Ft. Eustis, Va.
 Capt. Oren Douglas Boyce, Rural Retreat—Ft. Eustis, Va.
 Capt. Emmett V. Richardson, Marion—Ft. Eustis, Va.
 Capt. Philip Wood Oden, Richmond—Camp Lee, Va.
 Lieut. Josiah Thomas Showalter, Cambria.
 Lieut. Harold Meyer Boslow, Appalachia.
 *Lieut. Sidney Norman Gholsen, Waynesboro.
 Lieut. Wm. Aaron Glaubman, Clinchport.
 Lieut. Frederick Matthews Jacobs, Roanoke.
 Lieut. Gerald A. Long, Arlington.
 Lieut. Robert Burwell Nelson, Jr., Winchester.
 Lieut. Irvine Saunders, Bedford.
 Lieut. Eugene Bowie Shepherd, Richmond—Ft. Moultrie, S. C.
 Lieut. Wesley William Wieland, Va. Beach.
 Lieut. William Lynn Wingfield, Ashland.
 Lieut. Garland Miller Wright, Harrisonburg.
 Lieut. Harold Edward Sisson, Haynesville.
 Lieut. Chas. Weston Warren, Upperville.
 Lieut. Richard C. Potter, Jr., Marion.
 Lieut. Robert Franklin Bell, Petersburg—Camp Lee, Va.
 Lieut. Otho Perry Campbell, White Stone—Camp Blanding, Fla.
 Lieut. Wm. David Chase, McLean—Ft. Eustis, Va.
 Lieut. Franklin Harry Cohen, Norfolk—Camp Shelby, Miss.
 Lieut. Hugh Robertson Edwards, Newport News—Camp Shelby, Miss.
 Lieut. Leslie Allen Faudree, Stanleytown—Camp Blanding, Fla.
 Lieut. Gordon Douglas Hall, Dumbarton—Camp Blanding, Fla.
 Lieut. Edward Lee Hopewell, Strasburg—Camp Shelby, Miss.
 Lieut. Jerome Jos. Shapiro, Richmond—Camp Pendleton, Va.
 Lieut. Robert Sterling Montgomery, South Hill—Ft. Belvoir, Va.
 Lieut. Geo. S. Bowers, Rustburg—Ft. Meade, Md.
 Lieut. Howard Harman Curd, University—Ft. Meade, Md.
 Lieut. Richard Lee Jackson, Arlington—Ft. Meade, Md.
 Lieut. Ralph Maurice Lechause, Pardee—Ft. Eustis, Va.
 Lieut. Jos. T. Phillips, Jr., Newport News—Ft. Eustis, Va.
 Lieut. David Herman Rosenfeld, Richmond—Camp Lee, Va.
 Lieut. Walter Emerson Vermilya, Clifton Forge—Camp Lee, Va.
 Lieut. Chas. Palmer Alexander, Richmond—Langley Field, Va.
 Lieut. Kenneth Nathan Byrne, Lexington—Ft. Eustis, Va.

*Killed in automobile accident, February 28, 1941.

Lieut. Chas. Crawford Canada, East Falls Church—Ft. Story, Va.

Lieut. Julian Booth Doss, Penhook—Camp Lee, Va.

Lieut. Brooke Baylor Mallory, Lexington—Ft. Belvoir, Va.

Lieut. Richard Campbell Manson, Richmond—Camp Lee, Va.

Lieut. Jas. Talton O'Neal, Amelia—Ft. Story, Va.

Lieut. Thomas Addison Morgan, Franklin—Ft. Story, Va.

Lieut. Howard Garnett Snead, Franklin—Ft. Eustis, Va.

Lieut. Washington Carlyle Winn, Richmond—Ft. Monroe, Va.

Lieut. Samuel Michael Bloom, Clifton Forge.

Lieut. Albert John Russo, Check.

Lieut. Jefferson Bishop Kiser, Emporia.

Lieut. Leroy Sannoner Pearce, Farmville.

Lieut. John Edward Fissel, Jr., Newport News.

Lieut. Alex. St. Clair, Richlands—Middletown, Pa.

Naval Medical Reserve Officers

The following named medical officers of the Naval Reserve are now on active duty, or are under orders to report for active duty:

Comdr. W. P. Jackson, Roanoke.

Lt. Comdr. Wm. L. Schafer, Alexandria.

Lt. Comdr. Richard H. Price, Quantico.

Lt. Comdr. Wm. McC. Junkin, Fredericksburg.

Lt. Comdr. Russell M. Cox, Portsmouth.

Lt. Comdr. Harry Sutelan, Norfolk.

Lt. Comdr. Arthur D. Parker, Norfolk.

Lt. Comdr. Chas. H. Lupton, Norfolk.

Lt. Comdr. Frank P. Smart, Norfolk.

Lt. Comdr. Henry A. Kildee, Roanoke.

Lt. Comdr. M. T. Rosser, Hillsville.

Lt. Jas. H. Gillen, Arlington.

Lt. Frank Read Hopkins, Lynchburg.

Lt. Geo. W. Simpson, Norfolk.

Lt. Walter P. Adams, Norfolk.

Lt. Thos. N. Spessard, Norfolk.

Lt. Allen S. Lloyd, Norfolk.

Lt. Christian K. C. Hoyle, Roanoke.

Lt. (jg) Prosser H. Picot, Alexandria.

Lt. (jg) Wm. Ralph Counts, Amonate.

Lt. (jg) Samuel Irving Nichols, Norfolk.

Lt. (jg) James Parrish, Portsmouth.

Lt. (jg) George Zur Williams, Richmond.

Lt. (jg) Charles Morris Nelson, Richmond.

NOTE. Virginia is in the 3rd Army Corps Area, with headquarters in the U. S. Post Office and Court House, Baltimore, and Col. Henry C. Pillsbury, M. C., is Corps Area Surgeon.

It is in the 5th Naval District, with headquarters at Naval Operating Base, Norfolk, Va., of which Capt. William A. Angwin, M. C., is Medical Officer in Charge.

Book Announcements

Cyclopedic Medical Dictionary. Including a Digest of Medical Subjects: Medicine, Surgery, Nursing, Dietetics, Physical Therapy. By CLARENCE WILBUR TABER and 14 associates. Philadelphia.

F. A. Davis Company. 1940. 1488 pages with 273 illustrations. Cloth. Thumb-indexed, \$3.00. Plain, \$2.50.

It was with pleasure that I received this new medical dictionary for review, for the existing ones are so badly in need of revision and of dropping names of proprietary preparations which have not been on the market for many years, that I believe a little competition would be a healthy thing for them all. However, in a few moments I was completely disillusioned, for this particular dictionary is far worse than any I have ever seen before. It is at the same time both incomplete and inaccurate. As a partial proof of the above strong words I will cite some glaring errors which became obvious after a few minutes' inspection:

1. "illumination, direct. Light thrown upon the object from a microscope."

2. "dioxid(e . . . 2. A gas given off by the lungs. Extraneous gases inhaled may be exhaled also."

3. "glucoside . . . Ex: digitalis, . . ."

(Digitalis contains glucosides, but certainly the statement as it stands is false.)

4. "epinephrine. . . The active principle of suprarenal gland, . . ."

(It should read of course, of the "adrenal medulla.")

5. "acetylcholine. . . An alkaloid from ergot. It causes a lowering of blood pressure.

a. chloride. It is dissolved in glucose and given in daily doses . . . intramuscularly."

(This is hardly giving acetylcholine its due as a hormone, and one wonders how its salt could be dissolved in glucose.)

6. "hormone. . . Contains amino acids which may be the precursors of hormones;"

7. "vitamin. . . Some unknown substance in the stomach seems to be necessary to activate the vitamins. Without it they seem ineffectual."

8. Cevitamic acid is defined but ascorbic acid is not listed, although the latter is the preferred term for vitamin C.

Among the multitudinous omissions are *glycoside* (the preferred term for glucoside), *picrotoxin*, and *corticosterone*. "Carotid gland" should be carotid body. Moreover, no mention is made of the importance of the carotid body in respiration.

The above quotations are merely a few of many errors which I found during a half hour's examination of this book, which is a credit to neither author nor publisher.

R. J. MAIN.

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Editorial

Recent Studies in Arterial Hypertension.

In 1934 Goldblatt produced sustained hypertension in dogs by partial constriction of both renal arteries. Nervous reflex and humoral mechanisms have been considered in the explanation of this form of hypertension but recent studies emphasize the importance of the latter. The reasons for this may be summarized briefly.

Experimental hypertension of reduced renal blood flow has been produced in spite of renal denervation, explantation, or transplantation of the ischemic kidney, and even after total sympathectomy. Thus definite evidence has accrued against a neurogenic mechanism and interest has turned to a humoral mechanism of arterial hypertension. Important, at this point, was the revival of interest in "renin", a unique pressor substance first obtained from the kidney in 1898. A connecting link was forged when Landis et al showed that injection of a similar purified kidney extract (renin) elevated blood pressure in animals without reduction of peripheral blood flow, a phenomenon entirely in accord with the known facts concerning peripheral blood flow in human hypertension.

Recently, Page and his coworkers have offered an important series of observations concerning the mechanism of hypertension of renal ischemia. Experimental data supporting their hypothesis also include

therapeutic investigations on hypertensive animals, and humans with high blood pressure.

These workers developed a satisfactory method for pulsatile perfusion of the excised rabbit ear and found that renin combined with normal blood plasma caused a greater pressor effect on the rabbit ear vessels than renin alone. This and other experiments led the authors to postulate the following chain of events: Renin is liberated from the kidneys into the renal veins to react in the blood with a hypothetical substance "renin-activator". The product of this reaction is called "angiotonin", a partially vasoconstrictor substance, but sharply enhanced in action by "angiotonin-activator", a substance found in normal blood. However, normal blood also contains a substance coming from normal kidney tissue which inhibits the action of "angiotonin". Thus, either an excessive activation of pressor material, or, other things being normal, insufficient inhibitor or antipressor substance might lead to hypertension. Striking have been the experiments showing that sera from patients with normal blood pressure could be distinguished from sera of hypertensive patients by their respective effects on perfusion rates through the vessels of the excised rabbit ear. Finally, their conception of a substance in the blood and kidney inhibiting pressor action led the Indianapolis workers toward extraction of an antipressor substance from the

kidney for therapeutic use in animals and man. Antipressor action of renal extracts and their capacity to reduce blood pressure of hypertensive rats had previously been described by Harrison, Grollman and Williams. The same group later studied the action of renal extract in a few human cases but did not feel that conclusions were warranted at the time of their study.

Page and his coworkers have prepared extracts of kidneys which lower arterial pressure in patients with essential and malignant hypertension, and in hypertensive dogs and rats. This antipressor extract, according to the authors, differs from other preparations in that it does not produce a prompt fall in blood pressure but at first a rise and several days later a fall. A fall of blood pressure followed the use of this extract in numerous hypertensive dogs and rats, in six patients with essential hypertension, and in five patients with malignant hypertension. Generally the blood pressure trend in both animals and patients was toward the original level after discontinuing treatment four to six days.

Critical analysis of the extensive work of Page and his group will come with time and repetition by other workers. In spite of the apparently striking therapeutic results with kidney extract in animals and patients, much remains to be done. It is important to demonstrate that antipressor kidney extract supplies a substance needed for control of a known humoral pressor mechanism, and is not just another blood pressure lowering preparation.

J.E.W., JR.*

Dr. Joseph A. White.

When Dr. Joseph A. White died a few weeks ago in Richmond at the age of ninety-one, a period was placed to the career of a unique medical figure. His virility, his catholicity of interests, his personal charm

were familiar to all who knew him.

Perhaps Dr. White's greatest contribution was his pioneer work in the field of the eye, ear, nose and throat. He began his practice when specialists were as rare as hen's teeth, and when only a man trained as he had been, and capable of inspiring confidence as he did, could have launched himself successfully in a conservative community. Richmond's first specialist, he founded an Eye, Ear and Throat Infirmary and Dispensary, which flourished for years.

The impress of Dr. White's work remains and his memory will long be green in the minds of many friends and admirers.

An Opportunity to Study Tropical Medicine.

At this time when there is a distinct likelihood that our government may have to send troops into tropical countries, it is worth noting that a course in tropical medicine is to be given at the New York Postgraduate Medical School, Columbia University, during May, 1941. It is the first time such a course has been attempted in this country, and a notable group of authorities have agreed to undertake the instructional responsibilities.

The subjects under discussion will include malaria, yellow fever, intestinal parasites, filariasis, the dysenteries, tropical skin diseases, Kala Azar and leptospirosis, as well as the problem of sanitary engineering and tropical hygiene. The purpose of the course is to bring to physicians an authoritative review of the fundamentals of tropical medicine as well as the more recent advances in research in the field. The course will include lectures and demonstrations, and clinical and laboratory material will be available. Some practical work will also be done. To many American physicians tropical medicine will appeal as a new and fascinating subject, and it is anticipated that the course will prove a popular venture in postgraduate education.

*J. Edwin Wood, Jr., M.D., Professor of the Practice of Medicine, Medical Department, University of Virginia.

Proceedings of Societies

Elizabeth City County Medical Society.

At a joint meeting of this Society and the Dixie Hospital Medical staff on March 17, Dr. Robert H. Wright, Jr., of Phoebus, for several years secretary, was elected president, Dr. W. H. Howard of Hamp-

ton vice-president, and Dr. J. Lee Mann, also of Hampton, secretary-treasurer.

At this time, Dr. Raymond B. Newman of Hampton was elected a member of the Society and the Hospital Staff.

The Lee County Medical Society

Officers recently elected for 1941 are: President, Dr. J. H. Dellinger, Pennington Gap; vice-president, Dr. B. C. Grigsby, Bonny Blue; and secretary, Dr. C. H. Henderson, also of Bonny Blue.

Norfolk County Medical Society.

On March 10, Dr. Edwin P. Lehman, Professor of Surgery at the University of Virginia, addressed the Society on "The Problem of Hematogenous Osteomyelitis". Dr. B. F. Parrish was chairman for this meeting.

At the meeting on March 17, Dr. J. Edwin Wood, Jr., also of the University, spoke on "The Hearing of Recent Studies on the Treatment of Hypertension", at which time Dr. Walter P. Adams was chairman.

Under the chairmanship of Dr. James V. Bickford, an address was given on March 24 on "Changes in the X-Ray Picture of the Long Bones in Some Conditions of Childhood." Dr. T. Campbell Goodwin of Johns Hopkins University was the guest speaker on this occasion.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held on March 3, with the president, Dr. Powell Dillard, presiding.

Dr. W. T. Pugh presented a paper on "Malignancy of the Right Colon". This was followed by an illustrated lecture on "Significance of Pulmonary Hemorrhage" by Dr. P. P. Vinson of Richmond.

C. E. KEEFER, *Secretary.*

Richmond Academy of Medicine.

At the regular meeting on March 25, Dr. David T. Smith, Associate Professor of Medicine of the Duke University School of Medicine, spoke on "Staphylococcus Infections—Their Diagnosis and Management".

The Roanoke Academy of Medicine

Held its regular monthly meeting on March 3. Dr. L. R. Broome gave a paper on "Cavity Closure in Pulmonary Tuberculosis", giving the different artificial measures used in promoting closure and emphasizing those employed at Catawba Sanatorium which have stood the test of time. This was illustrated with X-ray films. The discussion was led by Dr. G. C. Godwin.

Dr. Kenneth D. Graves is president of the Academy and Dr. Allen Barker, secretary-treasurer.

Albemarle County Medical Society.

At the March meeting of this society, Dr. J. Edwin Wood of the University of Virginia faculty gave an address on "Cardiac Arrhythmias, Diagnosis and Treatment".

Dr. W. H. Wood, Jr., is president and Dr. E. W. Kirby, secretary of the society.

The Tazewell County Medical Society

Met for its regular bi-monthly meeting on March 13, in Tazewell. The meeting was well attended. The program was based on the care of the premature and immature infants and consisted of a paper on that subject by Dr. W. R. Strader of Richlands, and a motion picture on the same subject.

MARY ELIZABETH JOHNSTON, *Secretary.*

News Notes

Place of Meeting for 1941 Medical Society of Virginia Convention.

The Cavalier, headquarters for the next meeting of the Society, at Virginia Beach, October 6, 7 and 8, is situated on the broad Atlantic just five miles from the landing place of the first permanent English settlers in America—Cape Henry. Here, in 1607, landed the group known as The London Company. The most famous of these was Captain John Smith whose life was saved by the Indian Princess, Pocahontas.

The fireproof Cavalier Hotel is built on one of the most beautiful parts of the Virginia coast and has

been made even more delightful by sunken gardens and skillful landscaping. During the famous "Virginia Garden Week", these gardens are open to the public and are visited by people from all over the country.

All rooms have full outside exposure on the ocean, the gardens or the golf courses, circulating ice water and tub and shower baths. All are tastefully furnished.

The Pocahontas dining room is supplemented by enclosed dining porches where famous food is enjoyed to the utmost. Southern dishes prepared by colored cooks are a specialty of the Cavalier. Fa-

mous Lynnhaven oysters and clams are served the year 'round fresh from nearby Lynnhaven Bay. All other sea foods are featured, served the same day they are taken from the water.

The Hunt Room in the lower lobby is decorated to simulate an old English Inn. It is just the place to enjoy an informal get-together before dinner.

A full-size, heated, salt-water pool is situated on the first floor, adjoining the main lobby. There are two 18-hole golf courses adjacent to the hotel and available to guests. Green fairways and velvet-smooth greens make these two courses a veritable paradise for the ardent and skillful golfer, and at the same time appeal as strongly to those whose game is not quite so expert.

The normal mean average temperature at Virginia Beach over a 57-year period for October is 62.3°—a perfect temperature for an enjoyable visit.

Such is the setting for the 1941 Convention. Plan to be there!

Cards have been mailed all members, asking that titles for volunteer papers be sent the Society's office by June 1. Please give this attention, in order that the program may be arranged before the vacation season begins.

Those desiring to have scientific exhibits, should arrange for space promptly.

Have you a hobby? If so, why not exhibit it at this time? This is to be a new feature and we hope may prove a popular one. Others will be interested in your talents and pleasures. Advise headquarters office, 1200 East Clay Street, Richmond, how much space you will wish for your display.

American Academy of Pediatrics.

Region II (Southern Division) of the American Academy of Pediatrics will hold its annual convention in Richmond, with headquarters at the John Marshall Hotel, on April 24 and 25.

The scientific program will include three round table sessions. On the 24th, from 10:00 a. m., to 12:30 p. m., the subject will be "Mental Health of the Child as Related to National Defense" with Dr. Horton Casparis, Professor of Pediatrics of the Vanderbilt University, as chairman, and Dr. Harvie DeJ. Coghill, Richmond, as co-chairman. From 2:00 to 4:30 p. m., "Nutrition of the Child as Related to National Defense" will be presented, with Dr. Frederick F. Tisdall of the University of Toronto as chairman, and Dr. W. H. Sebrell of the National

Institute of Health as co-chairman. At 9:00 a. m. on the 25th, Dr. George Marshall Lyon, Huntington, W. Va., will speak on "Food Contaminations and Poisons". Following this, the round table will be on "Communicable Diseases and Their Relation to the Child During National Defense". Dr. Wilburt C. Davison, Duke University, will be chairman, and Dr. M. Hines Roberts, Emory University, co-chairman.

All members of the Medical Society of Virginia, interested in pediatrics, are invited to attend the scientific sessions.

The Tri-State Medical Association of the Carolinas and Virginia.

Held its annual meeting in Greensboro, N. C., February 24 and 25, under the presidency of Dr. C. J. Andrews of Norfolk, and an excellent program was given. Greenville, S. C., was selected as the next place of meeting. Dr. Addison G. Brenizer of Charlotte, N. C., succeeded to the presidency, and the following officers were elected: President-elect, Dr. George R. Wilkinson, Greenville, S. C.; vice-presidents, Drs. J. W. Hooper, Wilmington, N. C., H. J. Langston, Danville, Va., and G. H. Bunch, Columbia, S. C. Dr. J. M. Northington of Charlotte, N. C., was re-elected secretary. Councilors elected at this meeting for a term of three years are Drs. W. Steele Dendy of Pelzer, S. C., J. W. Davis of Statesville, N. C., and Allen Barker of Roanoke, Va. Councilors continuing in office are: Drs. J. R. Young, Anderson, S. C., R. P. Morehead, Wake Forest, N. C., D. B. Koonce, Wilmington, N. C., W. H. Prioleau, Charleston, S. C., and O. B. Darden and F. S. Johns of Richmond, Va.

The Southeastern Surgical Congress

Held an excellent meeting in Richmond, the middle of March, under the presidency of Dr. Irvin Abell of Louisville, Ky. Dr. Julian L. Rawls of Norfolk succeeded to the presidency, Dr. Alton Ochsner of New Orleans was named president-elect, Dr. Frank Johns of Richmond vice-president and Dr. B. T. Beasley of Atlanta, Ga., was re-elected secretary-treasurer. Selection of the 1942 place of meeting will be made by the executive council.

Noted Woman Physician to Appear in Richmond.

Dr. Josephine Neal, of New York, internationally known neurologist, will deliver a lecture on April 18, at 8 p. m. at the Richmond Academy of Medicine

Building. Her subject will be "Acute Encephalitis with Special Reference to That Following Infectious Diseases". Dr. Neal is clinical professor of neurology at the College of Physicians and Surgeons of Columbia University, and director of the department of infectious diseases of the nervous system at the Neurological Institute in New York. Her researches and writings in her field are noteworthy. The lecture is sponsored by Pi Chapter, Alpha Epsilon Iota, national fraternity of medical women.

Invitation is extended to the medical profession of the State and other interested individuals to attend this meeting.

The American Psychiatric Association,

Oldest national medical organization in the United States, will hold its ninety-seventh annual meeting in Richmond, May 5-9, 1941, at The Hotel Jefferson. The Association, which has an official membership of approximately twenty-five hundred, is meeting in Richmond for the second time in recent years, having last met here in 1925.

The Association was founded at the Jones Hotel in Philadelphia on October 16, 1844. It was then known as The Association of Medical Superintendents of American Institutions for the Insane. This meeting was attended by thirteen medical superintendents, and in American Psychiatric Annals they are reverently spoken of as "The Original Thirteen". Virginia was well represented as Dr. Francis T. Stribling of the Western Lunatic Asylum at Staunton, and Dr. John M. Galt of the Eastern Lunatic Asylum at Williamsburg, were among these "Original Thirteen". In 1893, the name was changed to The American Medico-Psychological Association, and in 1921, its name was again changed to The American Psychiatric Association.

The present officers are: Dr. George H. Stevenson, Ontario, Canada, President and Dr. Arthur H. Ruggles, Providence, R. I., Secretary-Treasurer.

Dr. Finley Gayle is chairman and Dr. J. Asa Shield vice-chairman of the local Committee on Arrangements, which has the following sub-committees:

BUDGET AND FINANCE: Dr. O. B. Darden, chairman, and Drs. H. C. Henry, Frank Redwood, and J. R. Blalock.

ENTERTAINMENT COMMITTEE: Dr. J. Asa Shield, chairman, and Drs. J. K. Hall, Howard R. Masters and Edward H. Williams.

HOTEL AND RESERVATIONS: Dr. Howard R. Mas-

ters, chairman, and Drs. Rex Blankinship, P. V. Anderson and George W. Brown.

EXHIBITS—SCIENTIFIC AND COMMERCIAL: Dr. D. C. Wilson, chairman, and Drs. B. R. Tucker, H. DeJ. Coghill, M. S. Brent and E. T. Terrell, Jr.

TRANSPORTATION: Dr. J. N. Williams, chairman, and Drs. P. H. Drewry, Jr., G. B. Arnold and P. G. Hamlin.

PUBLICITY: Dr. Edward H. Williams, chairman, and Drs. J. E. Barrett, J. S. DeJarnette and C. T. Wilfong.

SLATE OF OFFICERS

The *American Journal of Psychiatry*, in its January, 1941 issue, states that, in accordance with the Constitution of the Association, the Nominating Committee reports the following nominations for officers for consideration and action at the 97th annual meeting to be held in Richmond, May 5 to 9: For President—Dr. James K. Hall, Richmond; for President-Elect—Dr. Arthur H. Ruggles, Providence, R. I.; and for Secretary-Treasurer—Dr. Winfred Overholser, Washington, D. C.

Medical College of Virginia News.

Lectureships sponsored by the various medical fraternities of the college during February and March were as follows:

February 28—Dr. Fuller Albright, assistant professor of medicine, Harvard Medical School, speaking on *Some Aspects of Metabolic Bone Diseases*. Sponsored by Alpha Omega Alpha, honorary medical society.

March 12—Dr. Eugene M. Landis, professor of medicine, University of Virginia, Department of Medicine, speaking on *Capillary Physiology and Fluid Balance*. Sponsored by Sigma Zeta, national honorary fraternity.

March 14—Dr. Walter E. Vest, internist, Chesapeake and Ohio Hospital, Huntington, West Virginia, speaking on *Some Medical Aspects of Shakespeare*. Sponsored by Phi Beta Pi, honorary medical fraternity.

All of the lectures were well attended by the profession and students of the college.

The annual Stuart McGuire lecture and spring postgraduate clinics are scheduled for April 24 and 25. Dr. Alfred Blalock, Vanderbilt University, Nashville, Tennessee, will give the McGuire Lectures. Efforts are being made to bring a prominent

surgeon from England for the postgraduate clinics. The emphasis in the clinics will be on surgery. In connection with the lectures the ex-internes of the hospital division of the college will hold their annual reunion.

During the Southeastern Surgical Conference in Richmond the college had many visitors. It is hoped that, during the coming spring months when a great number of meetings will be held in Richmond, members of the profession will feel welcome to come and visit the institution. It will be a pleasure to have them.

Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy, and gastroscopy, gave three addresses during February and March, the first to the Kanawha Medical Society, Charleston, West Virginia, the second to the Cincinnati Academy of Medicine and the third to the Lynchburg Academy of Medicine.

Dr. William T. Sanger, president, attended the annual meeting of the Council on Medical Education and Hospitals in Chicago.

Dr. R. J. Wilkinson and Dr. F. O. Marple of Huntington, West Virginia, were recent college visitors.

Dr. M. H. Bland, Dr. H. G. Byrd, Dr. W. L. Nalls, Dr. Lewis E. Jarrett, Dr. P. S. Richards, Dr. W. Cardwell, Dr. R. C. Cecil, Dr. L. B. Todd, Dr. R. L. Clark, Jr., Dr. J. C. Parker, Dr. A. E. Powell, Dr. A. B. Croom, Dr. Jose Bou Lopez, Dr. M. J. Hoover, Jr., and Dr. Walter E. Vest, Jr., were recently initiated into Alpha Omega Alpha, honorary medical society. Dr. William T. Sanger, president, was made an honorary member of the society.

News from University of Virginia, Department of Medicine.

On February 24, Dr. F. M. Hanes, Professor of Medicine at Duke University School of Medicine, addressed the University of Virginia Medical Society on Sprue.

At the meeting of the University of Virginia Medical Society on March 7, Drs. Walter Freeman, Professor of Neurology at George Washington University School of Medicine, and James Watts, Associate Professor of Neuro-Surgery at George Washington University School of Medicine, spoke on the subject, Prefrontal Lobotomy in Mental Disorders.

On March 10, Dr. E. P. Lehman spoke before the Norfolk Academy of Medicine on the subject, The

Problem of Acute Hematogenous Osteomyelitis.

On March 7, Dr. Oscar Swineford, Jr., participated in the Postgraduate Course in Medicine and Surgery for the Elizabeth City County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Chronic Rheumatism. On March 14, Dr. J. Edwin Wood, Jr., presented a lecture before this Society on Cardiac Irregularities.

On March 11, Dr. Oscar Swineford, Jr., addressed the South Carolina Medical Society, meeting in Charleston. His subject was The Management of Asthma. At a meeting of the Tidewater Technicians Society at Newport News on March 12, he discussed Observations on Immunology.

The Virginia Section of the American College of Physicians met at the University of Virginia on March 13. The following program was presented: Drs. Dudley C. Smith and Walter Herold spoke on Gonorrheal Keratosis; Drs. Andrew D. Hart, Jr., and Ralph B. Houlihan discussed Haverhill Fever Following Rat Bite; Dr. Staige D. Blackford presented a paper on Abnormal Cholecystograms: Developments in Ninety Untreated Patients; Drs. Edwin P. Lehman and George M. Lawson discussed Clinical and Bacteriological Studies with Sulfanilylguanadine; and Dr. Gilmore Holland spoke on Electroencephalographic Studies in Myoclonia.

On March 17 to 20, Dr. Fletcher D. Woodward gave a series of Postgraduate Lectures before the Dallas Southern Clinical Society. His subjects were: Fractures of the Face and Sinuses; Diseases of the Nasopharynx; Treatment of Acute and Chronic Ear Infections; Treatment of Sinusitis; and The Value of Chemotherapy in Otitic Infections. At the meeting of the Academy of Medicine in Houston on March 21, he discussed the Treatment of Certain Malignancies of the Nose, Throat and Larynx.

Dr. C. E. Haberland,

Class of '24, Medical College of Virginia, who has been in practice for sometime at Stratford, Conn., is now stationed at Camp Blanding, Fla., with the 43rd Division of the 118th Medical Regiment. His rank is that of Lieutenant Colonel.

The National Foundation for Infantile Paralysis

Announces a series of six lectures on Infantile Paralysis by outstanding medical authorities, to be

presented at Vanderbilt University, Nashville, during April. They are as follows:

April 7—The History of Poliomyelitis (Progress of the Knowledge of the Disease up to the Present) by Dr. Paul F. Clark, Professor of Bacteriology of the University of Wisconsin.

April 8—The Etiology of Poliomyelitis (Including Its Relation to Diagnosis) by Dr. Charles Armstrong, Senior Surgeon, U. S. Public Health Service.

April 9—Immunity to Poliomyelitis (Including Serum Therapy and Vaccination) by Dr. Thomas M. Rivers, Director, Hospital of the Rockefeller Institute for Medical Research.

April 14—Pathology and Pathogenesis of Poliomyelitis by Dr. Ernest W. Goodpasture, Professor of Pathology of Vanderbilt University.

April 15—Epidemiology of Poliomyelitis by Dr. John R. Paul, Yale University School of Medicine.

April 16—Treatment and Rehabilitation of Poliomyelitis Patients by Dr. Frank Ober, Assistant Dean, Harvard University Medical School.

Invitation is extended the faculties of various universities and members of medical associations to attend these lectures.

Married.

Dr. A. M. Jacobson of Roanoke and Miss Ruth Peters of Richmond in March. Dr. Jacobson is a member of the class of '36, Medical College of Virginia.

Dr. George Barksdale Craddock and Miss Mary Spencer Jack, both of Lynchburg, February 1. This was incorrectly announced in last issue as Dr. George Craddock Barksdale.

Dr. Edwin Lawrence Kendig, Jr., of Richmond, and Miss Emily Virginia Parker of Appalachia, March 22.

Virginia Tuberculosis Association.

Dr. P. P. McCain of Sanatorium, N. C., president of the National Tuberculosis Association, was the guest speaker before the Virginia Association at its annual meeting in Richmond on March 13, his subject being "How We May Care for Our Advanced Tuberculous Patients". In the election of officers, Dr. Frank S. Johns of Richmond succeeded Mr. J. Vaughan Gary, also of Richmond, as president, and Miss Leslie C. Foster was continued as executive secretary. The following doctors are among those elected to fill vacancies on the board of directors: Drs. Charles P. Cake of Arlington; C. L. Harrell of

Norfolk; E. C. Harper of Richmond; Morgan B. Raiford of Franklin; Thos. N. Hunnicutt, Jr., of Newport News; and William Watkins of South Boston. Drs. Dean B. Cole and R. K. Flannagan of Richmond and Dr. Cake are members of the executive committee.

Dr. C. B. Bowyer,

Stonega, recently enjoyed a vacation in Cuba, visiting many places of interest.

"Exploring With X-Rays"

Is a new four-reel sound motion picture to be released by the General Electric X-Ray Corporation. The film is strictly educational in nature, having as its purpose, the telling of the story of X-rays and their many applications in language easily understandable to people without technical training. Designed principally for exhibition before lay audiences, the film will be loaned free of charge, except for transportation costs, to doctors who are asked to appear before such groups. It will be reserved for a short period for exhibition exclusively before professional society meetings. Further information may be obtained from the General Electric X-Ray Corporation, 2012 Jackson Blvd., Chicago, Ill.

The New York Polyclinic Medical School and Hospital

Announces the following special lectures:

Dr. Walter C. Alvarez of the Mayo Clinic will deliver a lecture on April 18, on "Puzzling Types of Abdominal Pain".

Dr. Ralph Moore Tovell, Hartford Hospital, Hartford, Conn., will lecture on May 2 on "Regional Anesthesia".

These lectures are open to the medical profession.

Dr. Charles F. Kincheloe,

Formerly of Falls Church, is taking a two-year residency in orthopedic surgery at the Hospital for the Ruptured and Crippled in New York. He recently completed an eight-months course in orthopedic surgery at the University of Pennsylvania Graduate School of Medicine.

Industrial Associations Meet.

The American Association of Industrial Physicians and Surgeons and The American Industrial Hygiene Association will have their annual meeting at the Hotel William Penn, Pittsburgh, May 5-9. This will be a "postgraduate" institute of industrial medicine and industrial hygiene and scores of perti-

ment papers and discussions are scheduled on the medical and engineering phases of employee health protection.

The American College of Physicians

Will hold its twenty-fifth annual session in Boston, April 21-25, with headquarters at the Hotel Statler. Dr. James D. Bruce, Ann Arbor, Mich., is president, and Dr. George M. Piersol, Philadelphia, secretary-general. Dr. J. Morrison Hutcheson, Richmond, is the Virginia member of the Board of Regents.

"The Foundation Prize".

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons announces that all manuscripts competing for the \$150.00 award which is known as "The Foundation Prize" must be in the hands of the secretary before June 1. Eligible contestants shall include only interns, residents, or graduate students in obstetrics, gynecology or abdominal surgery, and physicians who are actively practicing or teaching these subjects. Full information may be obtained from the secretary, Dr. Jas R. Bloos, 418 Eleventh Street, Huntington, W. Va.

Deaths of Infants.

According to a final census report by the Department of Commerce, deaths of infants under one year of age, exclusive of stillbirths, totaled 108,846 for 1939. This was in comparison with 116,702 for the previous year. Only fourteen states achieved an infant death rate of less than 40 per cent 1,000 live birth; eighteen including the District of Columbia had rates of between 40 and 50; and the remaining seventeen had rates of from 50 to 109 per cent. Although 48 was the average for the entire United States, the white average was 44.3, the Negro 73.2, and other races 97.2.

New State Epidemiologist.

Dr. Harry H. Henderson, formerly connected with the Diagnostic Center of the U. S. Veterans' Administration in Washington, D. C., has been appointed State Epidemiologist and assumed these duties on March 1. He succeeded Dr. J. B. Porterfield, who was recently appointed director of the State Bureau of Industrial Hygiene.

Bank Directors.

Other doctors than those named in last issue of the MONTHLY who have been re-elected as bank directors are: Dr. R. D. Garcin of Richmond on the board of the Bank of Commerce and Trusts, and Dr. R. W.

Miller, also of Richmond, with State-Planters Bank and Trust Company.

Dr. Frank A. Strickler,

Who is engaged in the practice of neurology and psychiatry in Roanoke, is also assisting in this work at St. Albans Sanatorium, Radford.

Dr. James McLean Rogers,

For some years in charge of the Alexander Hospital, Soon Chun, Korea, under the auspices of the Southern Presbyterian Mission, was recently recalled because of conditions in the Orient. He is now practicing at Glade Spring, this state.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Amer. assn. of med. soc. workers—Criteria for determining eligibility for medical care.

Bartlett, H.—Some aspects of social case work in medical setting.

Bateman, D.—Sir Berkeley Moynihan.

Blum, H. F.—Photodynamic action and diseases caused by light.

Boeke, J.—Problems of nervous anatomy.

Brown, A. L.—Technical methods for the technician.

Burnet, F. M.—Biological aspects of infectious disease.

Carlson, E. R.—Born that way.

Carroll, R. S.—What price alcohol?

Castiglioni, A.—History of medicine.

Eddy & Dalldorf—The avitaminoses.

Eddy, W. H.—What are the vitamins?

Fantus, B.—Technic of medication.

Fletcher & Raven—War wounds and injuries.

Hassin, G. B.—Histopathology of the peripheral and central nervous system.

Hay, W. H.—Some human ailments.

Hooton, E. A.—Why men behave like apes and vice versa.

Krogh, A.—The comparative physiology of respiratory mechanisms.

Larsell, O.—Textbook of neuro-anatomy and the sense organs.

Mackenzie, C.—The action of the muscles.

Military medical manual.

Nielsen, J. M.—Clinical neurology.

Officer's guide.

Silvette, H.—Catalogue of the works of Philemon Holland of Coventry, doctor of physicke.

Smith, G. E.—Plague on us.

Smith, K. M.—The virus—life's enemy.

Smith, L. W. and others—Cardio-vascular renal disease.

Sulzberger & Wolfe—Dermatologic therapy in general practice.

Tuttle, A. D.—Handbook for the medical soldier.

Vaughan, W. T.—Strange malady.

The American Academy of Physical Medicine

Will hold its Nineteenth Annual Meeting and Scientific Session on April 28, 29, 30, in New York, with headquarters at the Hotel Pennsylvania. Dr. Harold D. Corbusier, Plainfield, N. J., is President.

All members of the medical profession and those of related interests are invited to attend the scientific program. There will be no registration fee. Address inquiries to Herman A. Osgood, M. D., Secretary, 144 Commonwealth Avenue, Boston, Massachusetts.

Wanted—

Physician. Preferably young man who has had some experience in psychiatry or who wishes to enter this field; to associate in psychiatric work in nervous and mental private hospital. An attractive position with opportunity if he succeeds in the work. Address BXY care of this JOURNAL. (Adv.)

For Sale—

G. E. shock-proof, mounted or bed-side unit X-ray machine of late model F-2. Recently factory inspected and o.k'd. Has been used less than one year. Consists of foot switch, hand timer, fluoroscope, and mobile stand. Cost \$645, but will sell for \$400. Reason for selling—have two machines. Pictures sent on request. Dr. W. B. Barton, Stonega, Va. (Adv.)

Obituary Record

Dr. John Wyatt Davis, Sr.

Well-known Lynchburg physician, died February 27, after an illness of several months. He was a native of Richmond and sixty-five years of age. Dr. Davis first practiced in Richmond but had been in Lynchburg for the past thirty-five years, except for periods of service with the United States Navy in 1917-1919 and 1920-22. He was a member of the Lynchburg Academy of Medicine and the Medical Society of Virginia. He is survived by his wife, a daughter and a son, Dr. J. Wyatt Davis, Jr.

Dr. James Taylor Walker

Died at his home in Richmond on March 12. He was eighty-two years of age and a graduate of the

College of Physicians and Surgeons, Baltimore, in 1886. Before his retirement several years ago, Dr. Walker practiced medicine in Orange County. He had been a member of the Medical Society of Virginia for forty-four years. A son and a daughter survive him.

Dr. Sidney Norman Gholsen,

First Lieutenant, Medical Corps of the Army, who entered the Service from Waynesboro, Va., last June, was instantly killed when his automobile overturned on the road between Ft. Meade and Laurel, Md., on February 28. He graduated in medicine from the University of Cincinnati in 1935 and interned at the U. S. Marine Hospital in Key West, Fla.

Dr. Lunsford Hoxley Lewis,

Elkton, died March 8, at the age of sixty-one. He was a graduate of the Medical College of Virginia in 1910, and was formerly a member of the Medical Society of Virginia. His wife, two daughters, and a son survive him.

Dr. Samuel Marion Stone,

Charleston, W. Va., died March 16 of bronchial pneumonia. He was a native of Pittsylvania County and sixty years of age. Dr. Stone graduated from the Medical College of Virginia in 1916. He is survived by his wife, a son and a daughter. One of his brothers is Dr. James B. Stone of Richmond.

Resolutions on Dr. Barringer.

Paul B. Barringer died the 9th day of January, 1941, in the 84th year of his life. His accomplishments; scholastic, scientific and administrative, will be recorded in detail elsewhere.

To those of us who knew him during the past two generations he endeared himself as an interesting and sympathetic teacher and companion. He was unsurpassed as a raconteur; a recorder of evolution of scientific knowledge and of medical history. In fact he was a genial and charming host in every sense. We, especially those of us of the older generation, merely wish to express our love and affection for the unique and exceptional personality. We ask that this testimonial be spread upon the minutes of the Albemarle County Medical Society; that a copy be sent his wife and family and that it be published in the VIRGINIA MEDICAL MONTHLY.

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Virginia Beach, October 6, 7 and 8, 1941



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RICHMOND, VA., MAY, 1941

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PERIPHERAL VASCULAR DISEASE.*

DOUGLAS G. CHAPMAN, M.D.,
Richmond, Virginia.

Only a few years ago most of the diseases of the peripheral arteries were considered to be arteriosclerosis. More recent studies of these diseases have added much to the understanding of the arterial, capillary, venule and lymph systems. An increased knowledge of the autonomic nerves and of their relationship to the various circulatory systems has illuminated formerly poorly understood aspects of affection of the peripheral vessels. Now various divisions are made of the arteriosclerotic groups. The inflammatory, the spasmodic, the thrombotic and the embolic types have definite signs and symptoms fairly characteristic of each class. The present classification is by no means complete. With this better understanding of the diseases of the blood vessels, their treatment has decidedly improved in some types.

This related group of diseases is now being diagnosed in an earlier stage, and instead of treating gangrene when it develops, treatment is frequently curative before gangrene occurs. The physiopathologic process involving the blood vascular system has revealed interesting information regarding the more obscure conditions of visceral vascular diseases.

Five and seven-tenths per cent of the Mayo Clinic group of 500 patients of Buerger's disease showed involvement of the coronary arteries. There were three cases of abdominal involvement; two per cent had clinical evidence of cerebro-vascular involvement. Many cases of involvement of the larger arteries of the body are reported in the literature. When lesions are found other than in the extremities, they are usually degenerative in contrast to the inflammatory nature of the vessels of the feet.

Müller was among the first to differentiate clearly certain types of vasospastic conditions. Reynaud's classical description in 1862 of the disease which

bears his name has remained unchanged with minor alterations as to the signs, symptoms and pathology, but knowledge has been gained in regard to the physiopathology of the disease.

Buerger clearly classified thrombo-angiitis obliterans from a chaotic state. Little advance had been made in the treatment or in determining the cause of thrombotic and embolic conditions until recent years.

The earlier clinicians stated that by palpating the peripheral arteries, about ninety per cent of the cases of peripheral vascular diseases could be recognized in the earlier stages. Progress has been rapid and it is now necessary for the competent vascular clinician to study the effects of vasospastic states in their incipency. This is accomplished only by studying the patient as a general medical problem and not as a vascular problem.

Most capillary vessels are functionally innervated as observed by anatomical relationship of their fibers and by their physiological behavior under both normal and experimental conditions. It is further shown that the capillaries may contract independently to respond to individual circulatory needs of the tissues which they supply.

Since the capillary pressure has been directly measured in the arteriolar and venous capillary loops, the fluid exchange in the tissue is more clearly understood.

It is apparent that vasospastic conditions, whether they involve the arterial or venous systems, will have a pronounced effect on the tissues which they supply. The best gross example of this is the effect produced by arterial thrombosis of a large vessel where collateral circulation is not impaired. If gross vasospasm does not involve most of the collateral vessels, sufficient blood supply can be maintained to prevent gangrene. It is known that occlusion by a blood clot may produce gangrene when ligation does not.

*From the Medical Department, St. Elizabeth's Hospital, Richmond, Va.

If a thrombus occurs in one of the main vessels of the leg, the limb becomes cyanotic, distal pulsations in that vessel disappear, and frequently other large vessels will become pulseless on account of severe vasoconstriction. If spinal anesthesia is given or procain hydrochloride is injected into the thrombotic vessel, or if a large dose of papaverine hydrochloride is given intravenously or into the artery just proximal to the clot, in many instances the signs of vascular occlusion will disappear. The sympathetics have been paralyzed and vasodilatation will replace vasospasm.

There is present under normal conditions a balance of fluid from the blood vessels into the tissues and from the tissues into the blood and lymphatic systems. If there is an imbalance in this normal mechanism there results a vicious circle. Anoxemia, if marked, produces a disruption of normal endothelial permeability. It is evident that any condition which increases venous pressure, such as occlusion of a vessel by a thrombus, will likewise produce anoxemia, and this will disrupt normal physiological function between the vascular system, the perivascular space and the lymphatic system. These important contributions to the knowledge of the physiology of the vascular system enable one to foresee the ominous sequelae of unrecognized and untreated vasospastic crises which obviously demand immediate and well systematized therapeutic procedures.

The most important signs and symptoms of peripheral vascular disease are: paresthesia, abnormal color, pain, claudication, coldness, trophic changes, muscular atrophy, disappearance of subcutaneous fat, thin parchment-like skin, and not infrequently slight to marked edema. There are constitutional and infectious diseases which also produce many of these symptoms, such as lesions of the nervous system, the bony structure, of the soft tissues, and many visceral disorders. When the general examination has been done carefully and completely, the next step is to be sure that one of the above conditions does not co-exist with the vascular disease.

The methods of study are palpation of arterial trunks for sclerosis, roentgenography to determine the presence of calcification, and posturing of the limbs to bring out pallor, rubor and cyanosis, and the rate of filling and emptying of the veins. The usual signs and symptoms are evaluated, and if the diagnosis is not evident, other methods may be considered, such as contrast arteriography, using thora-

trast as an intraluminal medium to show collateral circulation and the degree of occlusion. Arterial elasticity can be demonstrated by the oscillometer. Magnesium sulphate is useful in determining the presence of early peripheral vascular disease. By its use the circulation time between the anticubital vein and the tips of the extremities is examined. In cases of vascular disease the time in practically all instances was increased in the abnormal extremity but not in the normal. There was also a longer circulation time in the older subjects. Histamine acid phosphate test is of value in location of vascular occlusion. In a practically normal circulation if a drop is placed on the skin and scratched in or given intradermally, a red spot develops, succeeded by a wheel and later surrounded by a flare. If there is impairment of the circulation, the wheel and flare will not appear, or will appear late.

Having established the diagnosis of a peripheral vascular disease, observation of the functional and physiological changes in the behavior of the vessels is extremely important. The amount of blood to the affected area is diminished. It is well at this point to determine the amount of true blockage (which can be but little, if at all benefited) and the amount of blockage due to vasoconstriction of the collateral circulation. The latter factor is the life line of the parts affected and upon it depends improvement or progressive gangrene.

The vasoconstriction is mostly under central control. The constricting impulses reach the vessels from the cord by the white rami communicants, then to the sympathetic chain on both sides of the cord. From the sympathetic ganglia they go over the gray rami to the spinal nerves and then to the walls in the vessels. If the sympathetic control to the affected area is interrupted the vasospastic influence is lost, thus giving a definite index as to the ability of the auxiliary circulation to carry on. This sympathetic tonus may be suspended by spinal anesthesia, by surgical nerve blocking and injection, by pentothal sodium intravenously and other related drugs, by the use of foreign proteins, such as typhoid vaccine, and by induction of artificial fever from environmental temperature. If oscillometric readings are made before and after sympathetic block, the percentage of improvement is easily recorded. By the use of a thermocouple and recording the temperature before and after one of the above procedures, a similar index is noted.

GENERAL MEASURES IN THE TREATMENT OF OCCLUSIVE PERIPHERAL VASCULAR DISEASE

Rest is the most important treatment to prevent the progression of this disease and also the most important after trophic changes, ulceration and gangrene have occurred. In the so-called pre-clinical stage, proper rest may greatly postpone the progression of this disease. Rest should be in a comfortable chair or bed. The level of the lower extremities is very important. Dependency produces engorgement, stagnation and edema, all hindering proper metabolism. Too much elevation produces blanching and ischemia.

The optimal level varies slightly with different individuals. It is at an elevation where the superficial veins project slightly above the skin. This is generally three to eight inches below the level of the heart.

Buerger's exercises, or one of the suitable variations, should be permitted if they do not increase the pain or cyanosis. There is no definite exercise applicable to all cases. In general, the time element is dependent on the color changes. The extremity affected is first elevated to 45° or 60°. From one to three minutes later there will be definite blanching; the legs are then dependent for three to eight minutes when fairly marked rubor appears and the legs are rested horizontally for three to five minutes. This procedure is repeated three or more times a day, elevating the legs five to ten times for each exercise.

Allen has suggested exercises of the feet while in the dependent position. First, the foot is flexed at the ankle, the toes are turned inward, then outward as far as possible, returned to normal, spread, and then returned to normal. This cycle is repeated with each dependent phase.

Heat: The temperature of an extremity is indicative of the state of circulation to the tissue. If it is constantly cold, the circulation is slow and impaired; if warm, it is more rapid and adequate. The circulation to the extremities is increased with heat and decreased with cold. It is, therefore, natural to apply heat, since the cold extremity further constricts an already inadequate blood supply. This principle is correct within a small temperature ratio, since additional heat increases the metabolic rate of the tissue, and, if this is increased beyond the ability of the diseased vessels to supply proper nutrition, the result will be degenerative changes of those tissues. Heat may be our most dangerous therapeutic agent.

Here a new term may be applied: baking gangrene. The optimal temperature is variable and directly dependent on the circulation. A good general rule to follow is not to increase the temperature to a point where pain and cyanosis are increased. Some patients do not tolerate a temperature above 86° to 93°F. (30° to 34°C.). There are others who seem more comfortable if the surrounding media is 104°F. (40°C.). Many devices are available. The Starr Sevringhaus thermo-regulated cradles are very satisfactory.

Baths are valuable and are best given in a tub containing about twelve inches of water at a temperature between 93° and 104°F. (34° and 40°C.). Such a bath should be given twice a day. Contrast baths are also valuable, but marked changes in the temperature are not advisable, since sudden permanent occlusion may occur. The Sitz bath has the advantage of heating the thighs. Neither bath is suitable for patients with open lesions. Wet dressings have largely been abandoned, because they cool too quickly. If advisable to use them on account of gangrene, they should consist of normal saline solution or boric acid solution and should be applied for about fifteen to thirty minutes several times a day and the temperature kept constant at the individual's tolerance, usually between 93° and 104°F. (34° and 40°C.).

Reflex heat is best applied by an electric pad over the abdomen or by immersing the hands in warm water. The use of hypertonic saline solution intravenously, three to five per cent, may be quite helpful in many cases, but has many disadvantages; it is expensive, difficult to carry out, and occasionally produces thrombosis.

Typhoid vaccine has its advocates, and there seem to be good physiological reasons for its use. There have been many objections to it, but if the dilution solutions are made from the stock preparation of typhoid H antigen, 100,000,000 typhoid bacilli to one cubic centimeter, and the solution is well shaken before using, and there is no evidence of acute infection, practically all of these objections will be overcome. The initial dose is usually 5,000,000 organisms. The injections are given every third day if the effect of the last injection has subsided. The dose depends on the reaction; if 5,000,000 gives a severe reaction, this dose may be slightly lowered, but most people will require a gradually increasing dose between three and five million organisms. The dose

may be increased to 200,000,000, but fifty to one hundred million is generally the maximum dose required. The minimal dose should give a mouth temperature of 101° to 103°F. (38° to 39°C.). There is usually a rise in skin temperature from 4° to 6°F. By this method pain is relieved and small ulcers are readily healed. Occasionally it is necessary to use triple typhoid vaccine to produce a satisfactory elevation in temperature.

Tobacco is known to constrict the small arteries and arterioles. Its use must be discontinued entirely if satisfactory improvement is to be expected. Alcohol produces vasodilatation and is definitely helpful. In one or two ounce doses of whiskey every four to six hours, it is more effective and less dangerous in relieving pain than morphine. Deproteinized tissue extract, free of insulin, histamine and acetylcholine, is not as painful as the more crude products, and has a definite place in the treatment of peripheral vascular disorders. The injections are given daily or several times a week in 2 cc. doses. Papaverine hydrochloride in half grain doses given intravenously at regular intervals or just proximal to the occlusion, if the occlusion is acute, may save an extremity. Its use as a vasodilator in the chronic cases is questionable. Crystalline testosterone propionate was given in the usual dose to a small number of patients with peripheral vascular disease with marked improvement. Vitamin B₁ in 5 mgm. doses three times a day, to be doubled in four days if there is no improvement, gave excellent results in a small group of cases.

A large amount of instrumentation in the diagnosis and treatment of peripheral vascular disease is not necessary. Mechanical therapy is accessible only to a few individuals who have both time and means. The vascular oscillating bed (Sanders) is the best for prolonged arterial exercises; that is, the alternative change from engorgement to ischemia. It is a motor bed which alternately elevates and lowers the head of the bed at regular cycles, requiring about three minutes to complete the cycle. The patient soon becomes accustomed to this gentle movement and the treatment can go on continuously or at definite intervals without fatigue to the patient. A thermostatically controlled cradle may be placed in the bed if desired. This like many other therapeutic procedures, is the most comfortable, the most effective, and likewise the most expensive.

The Pavex machine or pressure suction boot is based on the principle of fluctuations in the positive

negative pressure to an extremity. This, too, operates in cycles and there remains some difference of opinion as to the frequency of the cycles and the amount of both the negative and positive pressure changes. The Harman technic is, however, most frequently followed. Its use is limited mainly to the acute embolic and thrombotic processes and to the senescent or diabetic arteriosclerotic. This treatment is definitely contra-indicated in cases of any acute or subacute condition found in the peripheral arterial diseases. It is also contra-indicated in subacute thrombo-phlebitis.

Intermittent venous hyperemia has been most satisfactory with the various groups that have used it most. In those who prefer some other type of treatment, it seems to be of less value. It is apparently of greatest value in relieving cramps and fatigue where the symptoms are due to reflex spasm. The contra-indications are: (1) increased pain with the use of the machine; (2) arterial blockage above the level of the calf; (3) active infection of the wound; (4) toxic symptoms.

The surgical treatment of peripheral vascular diseases is still of paramount importance, but fortunately is less frequently indicated than formerly. It is much better to give a thorough trial of conservative treatment—first medical, and then with minor surgery—before resorting to a high amputation. Nerve block is one of the most valuable procedures for the relief of pain and for dilating the collateral circulation that we have at our disposal in the advanced cases. Lumbar ganglionectomy is of value in those cases where more conservative treatment has failed, when the patient is a good surgical risk, the extremity is cold and moist, and there is dryness, improvement in cyanosis, and an increase in temperature after spinal or peripheral block.

Probably the most important single factor in treating this disease is to see that the patient properly applies the instructions given him. The following instructions are always advised:

1. Wash the feet daily with neutral soap and warm water if there are no open sores. Dry thoroughly with a soft cloth, avoid rubbing or irritating the skin. Apply seventy per cent alcohol to help dry the skin, then rub lanolin lightly into the skin and nails but do not daub.
2. Avoid cold by wearing woolen socks, two pairs in winter, and white cotton socks in summer if the feet keep warm. Use a clean pair of socks

- each day; sleep in clean wool socks. Beware of heat; electric pads, heated cradles and hot water bottles are dangerous.
3. Shoes must be of soft leather—kangaroo tops are best. They must fit properly and new shoes should be worn only a few hours a day. If there are open lesions, cut shoes are best.
 4. Antiseptics are dangerous. Do not use iodine or any strong antiseptic. See your physician for treatment of cuts.
 5. Toe-nails should be cut straight across and only after the feet have been washed in water, dried and then washed in alcohol. Do not pick under the toe-nails. For any irritation under the nails, blisters or irritation about the feet, see your physician. Do not cut corns and cal-luses.
 6. Do not stand erect for a long period; short walks only if no swelling occurs.
Do not wear circular garters.
Do not sit with the legs crossed.
Do not sit with the legs dependent for too long a time.
Do not exercise the feet except as directed.
Do not use tobacco in any form.
Place a small pillow just back of the heels when in bed to prevent prolonged pressure on the heels and bony prominences of the feet.
 7. Eat a general diet and drink two quarts of water a day.

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FIBRO-EPITHELIAL TUMORS, CHRONIC CYSTIC MASTITIS, AND CARCINOMA OF THE BREAST.*

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Among the commonest conditions for which a physician is consulted are lumps in the breast, and pain

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in the breast, in women. When a physician is consulted by a woman regarding a lump in her breast, he is faced with a real emergency, just as much as though he is consulted by a person with a possible fracture of a bone, and he must at once proceed to determine the nature and the potentialities of that

lump, calling consultation if need be. A lump in the breast of a woman may be benign, with little or no tendency to be associated with malignancy; it may be benign, with considerable tendency to be associated with malignancy; or it may be malignant from the beginning.

It is well to look at some of the benign conditions, using illustrative cases to aid in understanding the situation.

FIBRO-EPITHELIAL TUMORS OF THE BREAST

It is necessary to distinguish between true tumors and hyperplasias and cysts; and the terms "adenoma", "adenomatous", "cystadenoma" have come to be used very loosely.

Cruviellier clearly distinguished benign tumors of the breast; called them "fibroma", and likened them to the fibroid tumors of the uterus. His report before the Academy of Medicine in Paris raised a storm of discussion and opposition, which continued (almost raged) through several sessions following his presentation. Up to that time, any lump in the breast had been considered cancer or potential cancer, and was treated accordingly. He said these tumors are round, smooth or mammelated; are hard; develop in fibrous tissue; are freely movable in the subcutaneous tissue of the breast; and are not adherent to surrounding structures. They are only local disturbances in the breast, and never develop into cancer. He said not to operate until the size and weight of the tumor requires it. They do not return when removed.

Schimmelbusch discussed fibro-adenoma of the breast, of which the characteristic feature is their encapsulation; they are freely movable in the subcutaneous tissue over the breast; are never adherent to the pectoral fascia or the muscle itself, or with the skin—unless some special factor causes adhesion to the skin, as when an exploratory incision has been made over the tumor, or where the tumor grows so fast as to stretch the skin, or when treatment with pastes causes inflammation and ulceration which leads to adhesions between the tumor and the skin. Neither are they adherent to the breast tissue itself, unless it be recent and rapidly growing tumors. They are readily removed surgically, and the presence of the tumor in the breast keeps up a fear of cancer.

It is important to keep in mind the distinction between hyperplasia and neoplasia or tumor formation; and the use of the term "adenomatoid hyperplasia" instead of "adenoma" or "adenomatous" in

certain conditions that are evidently not tumors, is an improvement over the older usage.

There is confusion today, and we see lumps removed from the breast as "adenofibroma" which are not tumors: some are Bloodgood's "non-encapsulated area of chronic cystic mastitis" or his "non-encapsulated area of adenomatoid hyperplasia", or Hertzler's "interstitial fibrosis" or "interstitial hyperplasia"; and some are areas of normal breast tissue in various stages of involution.

McFarland studied 300 tissues from five large hospitals. These tissues had been indexed as fibro-epithelial tumors, under thirty-three different names. Of these tissues, 105 were tumors, 147 were not tumors, and thirty-seven could not be determined: the others were discarded because of faulty technique or inadequate material. The term "fibro-adenoma" is used for many cases which are not tumor; so McFarland says it has no meaning at all, and should be abandoned. He favors Warren's term, "periductal fibroma", for these breast tumors, since the fibrillar tissue seems to be derived from the periductal tissue.

One of our cases studied by the whole organ section method shows the formation of the periductal fibroma from the connective tissue of the gland fields.

T-59. A married white woman, twenty-nine years of age. No family history of cancer, tuberculosis, heart or renal disease. A lump was removed from her right breast, and microscopic examination showed it to be carcinoma. About three weeks later, the right breast and some of the underlying muscle, with three axillary nodes, was removed; but it was not considered a radical operation. Microscopic examination showed carcinoma in the breast, and carcinomatous infiltration in one of the three nodes removed; adenocarcinoma, Grade IV malignancy. Her recovery was uneventful. Three years later, she was delivered of a full-term child—her first child. Five weeks after birth of the child, she noticed lumps in her remaining (left) breast; and at the same time she developed a severe pain in the right hip, which continually grew worse. There were masses in the left breast: one sharply outlined mass about 10 cm. across, and several smaller lumps, cherry to plum size. X-ray examination showed a definite metastasis in the right ischium; nothing noted elsewhere in the skeleton. She was given X-ray treatment, with regression of some of the smaller nodules in the breast; but the large mass did not regress: nodules developed in the fifth lumbar vertebra and in the scalp. These were treated with X-ray, with little improvement. There was palpable evidence of enlargement of the liver and spleen: for several weeks the liver was hard and nodular, and enlarged down to the ilium; this enlargement was confirmed by radiologic and fluoroscopic examination. She died, seven months

after discovering the lumps in the left breast, and five months after reporting for examination. At autopsy, only the left breast could be removed. Section is shown in Figure 1.

Those who observed the case are of the opinion that the metastases came from the first breast (right).

mors at length here; but it is desirable to point out certain features in connection with some of these tumors, with the idea of reducing the present-day confusion.

1. *Periductal Fibroma* is a common tumor in the

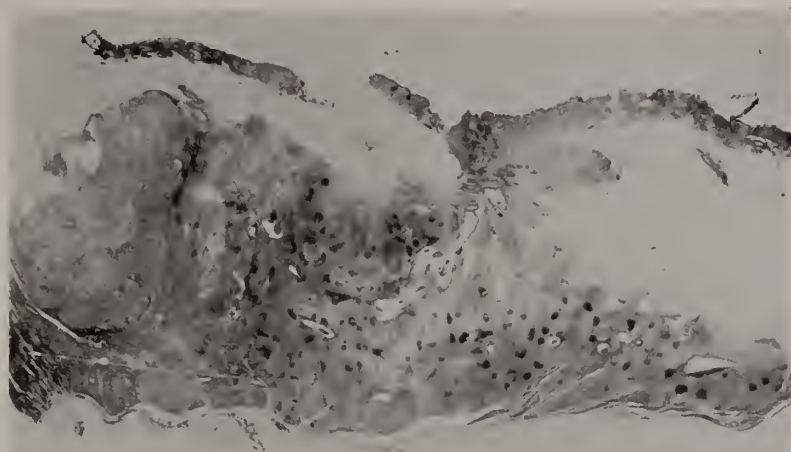


Fig. 1.—(T-59). Beneath the nipple the ducts are quite widely dilated, with very little papillary ingrowth of their walls. Deeper in the substance of the breast are small cysts and dilated ducts, generally with smooth walls, and often with homogeneous red-staining contents, with no piling-up of the epithelium. The stroma is quite dense mature connective tissue, with little admixture of areolar tissue, and is continuous with the connective tissue of the gland fields, separating the alveoli within the gland fields by quite dense mature connective tissue. In some areas the mature connective tissue in the gland fields forms papillary infoldings and ingrowths in the walls of the alveoli, forming quite definite clefts, and being marked off from the surrounding stroma by the original outlines of the gland fields. As a result of shrinkage in fixation, some of these gland fields have separated in some places from the surrounding stroma, giving an indication of the capsule or sharp line of cleavage which marks off the fully developed intracanalicular periductal fibroma.

At the left end of the section is an area fairly distinctly outlined from the surrounding breast tissue, especially below and to the left. This area is made up of groups and strands of epithelial cells, with a variable but nowhere dense stroma of mature connective tissue. At the border of this area, the groups of epithelial cells are extending into the surrounding connective tissue, while the center of the area is necrotic. In the lower border of the section, directly beneath the area just described, is another area, 4 mm. in diameter, showing the same structure as the area described above.

Diffuse duct carcinoma of the fibrocarcinoma type (Grade II, Sophian), in a breast the seat of chronic cystic mastitis of the minute cyst and dilated duct type, and with an area of early formation of intracanalicular periductal fibroma, showing at least one mode of formation of this type of fibroma in the substance of the breast.

Here we see the different conditions in different parts of the breast: dilated ducts beneath the nipple; small cysts and dilated ducts in the substance of the breast; and two nodules of cancer. One of the most striking conditions seen in this section is the growth of the connective tissue in the gland fields to form papillary ingrowths and infoldings of the walls of the alveoli, to form definite clefts; the original outlines of the gland fields marking these fields off from the surrounding stroma, with separation along some of these outlines, indicating the capsule or sharp line of cleavage which marks off the fully developed intracanalicular periductal fibroma. That is, we see here the mode of formation of the periductal fibroma in the substance of the breast.

It is not intended to discuss fibro-epithelial tu-

female breast. It occurs chiefly in young women, beginning (or first being noticed) at or shortly after puberty, growing during the years of sexual activity. It is common in nullipara. It is oval or egg-shaped, often bossellated; and is freely movable. Usually single, there may be two or more tumors; the rest of the breast is usually normal. The tumor is usually well encapsulated, and commonly can be shelled out of its capsule.* With the rich blood supply to the capsule at times, there may be adhesions where the blood vessels enter. Three types are recognized: (a) intracanalicular, the most common type; (b) intercanalicular; and (c) pericanalicular, rare.

*Part of the confusion between tumors and non-tumors is probably expressed in the statement that the tumor may be only partly encapsulated, being continuous with the surrounding breast tissue on one side. These partly encapsulated lumps are commonly not tumors.

T-74. A married white woman, thirty-five years of age; three pregnancies, last eight years ago. Menstrual cycle somewhat irregular, duration four to five days, flow profuse. General health good. History of injury to breast; growth appeared in right breast two months prior to operation; breast tender, and growth continued to increase in size to time of operation. No discharge

from nipple. *Operation:* simple mastectomy. No X-ray treatment. Section is shown in Figures 2 and 3.

Though these tumors may grow to be quite large. There is very little tendency to malignant change, even in very cellular and rapidly growing tumors.

Müller gave the name, *cystosarcoma phyllodes*,



Fig. 2.—(T-74). The ducts beneath the nipple are dilated and show marked papillary ingrowths of their walls; these papillary ingrowths covered by a layer of epithelium 3 or 4 cells thick. Deeper in the substance of the breast are small cysts and dilated ducts, some with smooth walls, some with papillary ingrowths of the walls; some are empty and some contain granular red-staining material. In general, the gland fields are in good condition, with the alveoli not dilated and no piling-up of the epithelium, and the loose connective tissue infiltrated with lymphocytes. The stroma is quite dense mature connective tissue, without much admixture of areolar tissue.

Separate from the main breast specimen, but belonging to it, is a circumscribed firm white nodule, shown in section in the lower part of the figure. This nodule is shown in Figure 3.

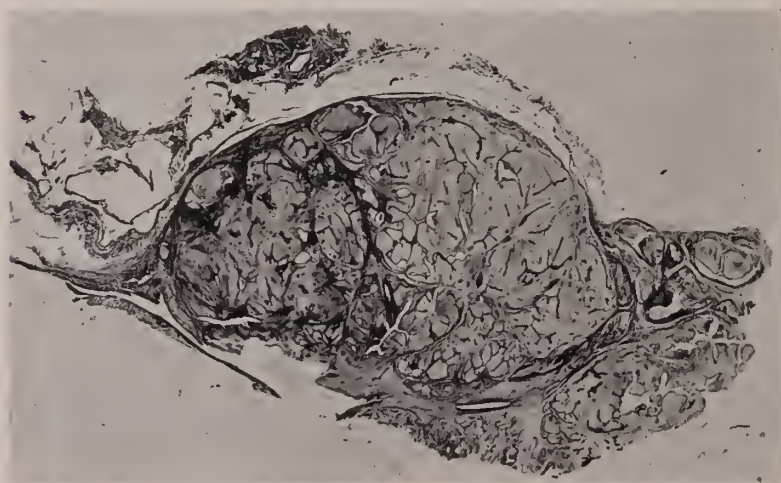


Fig. 3.—(T-74.) The section of the nodule shown below and to the left in Figure 2. The sharp outline of the nodule is distinct; and in the substance of the nodule are clefts and spaces lined by epithelium, the lighter ingrowths being composed of very loose immature connective tissue. X6.

Intracanalicular periductal fibroma, in a breast with dilatation and papillary ingrowths in the ducts beneath the nipple, with an area of chronic cystic mastitis with minute cysts. There is no evidence of malignancy.

to a rapidly growing intracanalicular periductal fibroma, with large and very cellular papillary infoldings of the duct walls; and when the tumor becomes adherent to or perforates the skin, it gives a false appearance of malignancy. On his visits to various museums, Müller saw specimens of this tumor—up to eight and one-half pounds in weight. All were in the breast; one in a male breast. He devotes four of the sixty pages in Part One of his book to a discussion of this tumor, which he recognized as benign; no adhesions; no softening; have nothing to do with cancer; and are cured by removal. This tumor usually occurs in younger women than does cancer.



Fig. 4.—(T-11). Above, the tumor is bordered by the greatly thinned and flattened epidermis. In the center is a large duct with very cellular (stains black) papillary infoldings of its wall into the lumen. Above is another duct presenting the same picture; and at the extreme left is another duct presenting very much the same picture. At the right is another duct presenting the same picture; and at the extreme right are smaller ducts with less marked infolding of the walls. In the center and above, the stroma is loose and fatty (pale staining); below, the stroma is much more fibrous (darker staining). $\times 11\frac{1}{2}$.

Intracanalicular periductal fibroma, with markedly cellular papillary infoldings of the duct walls, and loose fibrous and fatty stroma (Müller's *Cystosarcoma Phyllodes*).

Though Müller devoted so much attention and space to this tumor, no mention is made of it in many of our present-day publications (Ewing has it in his *Neoplastic Diseases*); and it leads to confusion today, as illustrated by the following case, observed in a large cancer hospital.

T-11. A married white woman, fifty-four years of age, noted a lump the size of a marble in her left breast: this lump grew rapidly, and in two months measured 9x10 cm. It was freely movable over the chest wall, but showed some attachment to the skin. The *clinical diagnosis* was bulky carcinoma, and the breast was removed. Section is shown in Figure 4. The wound healed, and there was no evidence of disease, one year later.

Though these tumors grow rapidly and to a large size, there is little tendency to malignant change; but a few cases have been reported in which a sarcoma developed on the basis of one of these tumors, so removal is indicated.

2. Duct Papilloma. Other names are: adenocystoma, papillary cystoma, intracystic papilloma, proliferous cyst, hemorrhagic cyst. These tumors occur in older women, most commonly after the menopause, often in breasts the seat of chronic cystic mastitis. It begins as a papilloma in the wall of a duct, most commonly beneath and near the nipple; as it enlarges, it distends the duct, and often forms a solid palpable mass. There is a rich blood supply of thin-walled blood vessels, which explains the characteristic symptom of bloody discharge from the nipple. Reclus' case with an egg-sized tumor, and bleeding from the nipple, in a breast the seat of chronic cystic mastitis, probably belongs here. Eberts says that papilloma develops in ducts, in many instances in pre-existing ductal cysts, and tends to become malignant.

T-72. A married colored woman, twenty-nine years of age, entered the hospital with a lump in the left breast, and bleeding from the nipple: duration and size of the lump not given in the history. On examination, there was a lump in the middle area of the lateral half of the left breast, having a small attachment just below the nipple. With pressure on the mass, blood escaped from the nipple. *Clinical Diagnosis:* duct papilloma. *Operation:* a mass, 3x5 cm. was removed from the breast. Section is shown in Figure 5.

There is a quite marked tendency for these tumors to become malignant; and they must be regarded with suspicion, especially when the discharge from the nipple contains fresh red blood cells.

CHRONIC CYSTIC MASTITIS

In any discussion of chronic cystic mastitis, it very promptly becomes evident that not all in the discussion have in mind the same condition of the breast. Thus, a discussion of the relation of chronic cystic mastitis to carcinoma of the breast often resolves itself into a discussion of the relation of blue-domed cyst to carcinoma of the breast. In a recent discussion, a radiologist expressed surprise that so many of the carcinomas of the breast which I showed in whole organ sections were in breasts the seat of chronic cystic mastitis; and a surgeon did not see the chronic cystic mastitis in the sections I was showing: he considered "chronic cystic mastitis" to mean "blue-domed cyst".

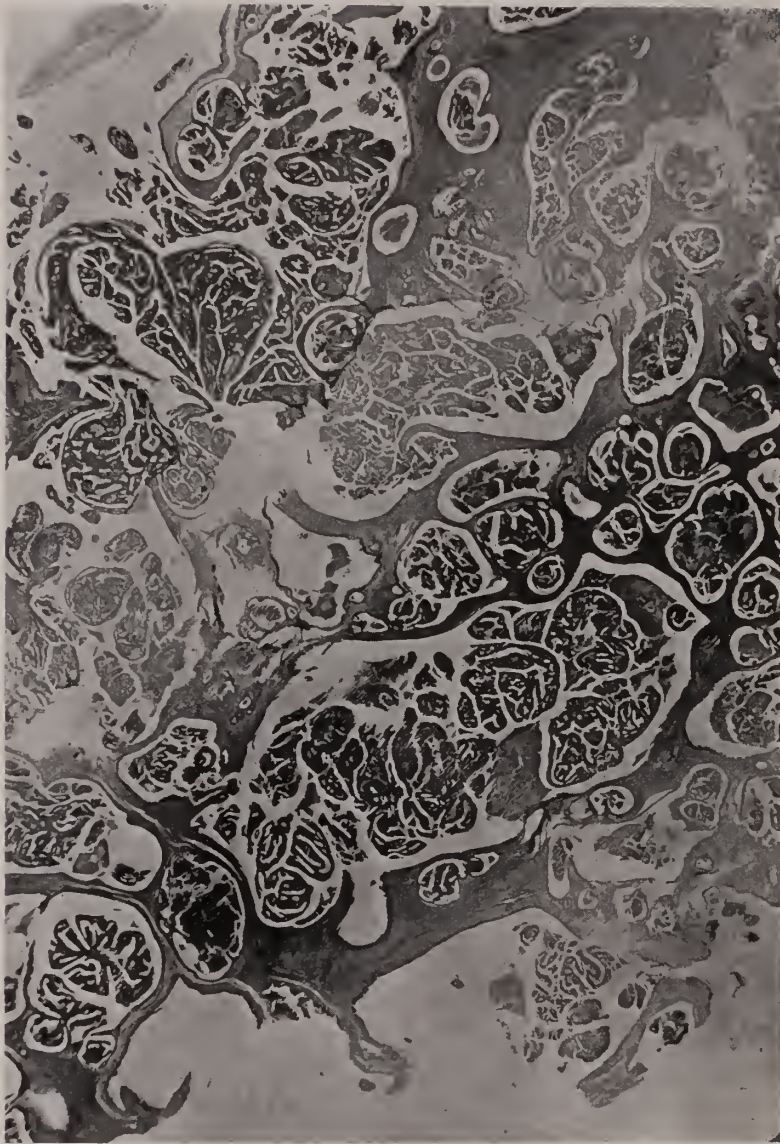


Fig. 5.—(T-72). Throughout the section the ducts are distended and filled with papillary masses of epithelial cells on slender cores of cellular connective tissue. The surrounding breast tissue shows normal alveoli arranged in normal gland fields, with lymphocytic infiltration of the loose connective tissue of the gland fields. X15.
Duct Papilloma.

So, it seems worthwhile to survey the development of our knowledge regarding the condition known as chronic cystic mastitis, to see if we can get a more uniform understanding of the condition, and of the process.* Such a uniform understanding is especially necessary for the surgeon, the radiologist, and the pathologist, since these three make up the nucleus

of the group who are studying lesions of the breast.

Sir Astley Cooper described cases of Diseases of the Breast: some of his cases of Hydatid Disease are recognizable as what is later called chronic cystic mastitis; and one of his cases, a twenty-nine-year-old woman, developed a cancer in a breast showing small cysts.

Brodie described the condition in his lectures on Sero-Cystic Tumors of the Breast.

Virchow described the condition as Interstitial Mastitis; and cited other names for the condition at

*This phase of the subject is discussed at some length in my presentation at the Third International Cancer Congress, in Atlantic City, N. J., September 11, 1939, and published in the *Boletín Científico de la Liga contra el Cáncer*, 15, 105 (May-June), 1940.

that time. The condition develops in the interstitial tissue of the breast, and many breasts are removed on account of fear of carcinoma. There are two stages: (1) inflammation, characterized by leucocytic infiltration of the interstitial tissue, and (2) proliferation of the epithelium in the lobules.

König described the condition, adopting Virchow's name of interstitial mastitis; and this description goes through the various editions of his textbook of special surgery.

Billroth discussed chronic mastitis, but his cases are not what we know as chronic cystic mastitis today.*

Reclus described the condition as cystic disease of the breast; said that cysts of the breast are very common; that there are two distinct characteristics of the condition: (1) the cysts are quite numerous and occupy the entire breast, and (2) the cysts are bilateral.

Schimmelbusch described cases of cystadenoma of the breast; he described the feeling on palpation as of a bag filled with shot. The condition is benign, but carcinoma developed in the breast of one of his cases. He cited forty-three cases of cystadenoma (Reclus thirty, Burchkart four, Rovsing one, Tischendorf one, Schimmelbusch seven) in three of which carcinoma developed later. He says the condition is different from the senile or involution cysts of the breasts of older women: in cystadenoma there are numerous cysts and hypertrophy of the gland; while the senile involution cysts of the breast is a result of atrophy of the breast, and in several cases there was only one or two cysts, frequently with only scant strands of breast tissue. In cystadenoma, the first change is an increase in the epithelium of the acini, so that some of the acini come to be lined with several layers of epithelium, which in some cases entirely obliterates the lumen. The acini are enlarged by the increase in epithelium, in great part at the expense of the interacinar connective tissue, so the acini come to lie in contact with each other. The proliferated epithelial masses break down in the center, and the acinus assumes the appearance of a small cyst.

König returns to the discussion of "Chronic Cystic Mastitis" (interstitial mastitis, cystadenoma of the breast, Reclus' disease). In his textbook of special

surgery, in 1875, he described as interstitial mastitis (following Virchow's designation of the condition) a disease of the female breast which stands between inflammatory processes and tumors, "an extremely frequent process in the breast, which leads to the formation of numerous especially smaller, but also larger and larger, cysts". He is astonished that surgeons describe such a cystic breast as a very rare occurrence; that even German surgeons say they received an insight into this "new disease" on becoming acquainted with "Reclus' Disease"; and he is not entirely free of surprise when Schimmelbusch, on the basis of six observations, again gives the disease a new—and, according to König's idea, a false—name. But he is not surprised that none of the authors have taken the trouble to look in any of the editions of his book, to see whether anything regarding the disease is to be found there: he is not surprised, as he has long been accustomed to that.

He had fifteen preparations from women who feared cancer and would not accept the assurance that their breast tumors were not carcinoma but were inflammatory; numerous clinical observations, and in some carcinomatous breasts he has found a coexisting mastitis; in many cases the development of the carcinoma can be understood in the histologic picture only when one understands the mastitis.

So, he considers "Chronic Cystic Mastitis,"* as he will henceforth call the condition, a very frequent disease.

Chronic cystic mastitis occurs in every age period after puberty, and frequently involves both breasts. Characteristically it has a typical course, even in young women: one or both breasts swell and become painful during menstruation, and not infrequently the axillary nodes swell at the same time. With cessation of the menses, the general swelling disappears, but individual nodules remain and gradually become leather-like hard. But not all cases develop this way; and, as the course may infrequently be without pain, no attention is paid to it, and the woman is first disturbed by a gradual hardening of the breasts, *by the appearance of numerous leather-like hard indurated tumors*. If there are no larger cystic nodules, a symptom characteristic for the differentiation of these tumors from neoplasms is: while one can pick up one of these nodules between the thumb and finger, they disappear as nodules as soon as the breast

*Billroth does not use the name "chronic cystic mastitis", though some later writers ascribe that name to him.

*The first time I find the term in the literature.

with the apparent nodules is pressed against the chest wall with the flat of the hand.

This may continue for years. Usually there is no anxiety until one or more distinct nodules become evident in the affected breast; rarely larger than a pigeon's egg, frequently smaller and smaller; they are distinguished by their egg or spherical form, their elastic tension, and fluctuation.

Papilloma and carcinoma apparently develop in a mastitic breast more frequently than in a healthy breast.

The histologic picture is characteristic. It is made up of certain changes in the gland substance, with at the same time certain changes in the interstitial tissue. The lumen of the small vesicles as the small ducts, begins to fill with cells, the epithelium frequently appears to be in layers, as a result of rapid proliferation, though the new layers are regularly thrown off. As a result of this, the walls of the vesicles are distended, the vesicles come in contact with one another, the intervening walls disappear, and larger spaces are formed, which contain mostly a watery or mucoid dark-colored fluid together with firm masses. In the same way the ducts are enlarged to form cysts. By the confluence of several and many of these spaces, and by their enlargement, is developed larger and larger cystic spaces. It makes no difference whether new acini are formed, or only the existing terminal ducts are involved—and König does not undertake to distinguish which is more frequent. So, it is incorrect to speak of an "adenoma", else one would have to speak of the lactating breast as adenomatous.

The connective tissue is swollen and contains nuclei, and is infiltrated with leucocytes. The older nodules are recognizable by the fibrous firmness of the interstitial tissue; this firmness causes the peculiar indurated hardness of the nodules which usually extend gradually throughout the entire breast.

The gross appearance is characteristic; the cystic appearance usually is more marked in the portion of the breast toward the pectoral muscle. One sees larger round nodules as brown colored spherical or egg-shaped sections, or small gray nodules on the cut surface; not infrequently numerous dark vesicles the size of the head of a pin, often grouped together like grapes. If one cuts the smaller and larger vesicles, the fluid spurts from the larger ones as a sign of the pressure on the cyst wall. Sometimes the larger ducts

are dilated. The cut surface of the breast appears moist, at times mucoid, with fissures and open vesicles of different size; and other vesicles bulge on the cut surface.

König repeats: this disease must be taken into consideration, *clinically and pathologico-anatomically*, in all chronic diseases of the breast. Also, chronic cystic mastitis is extremely frequent as a disease by itself, and as a complication of other diseases of the breast.

Paul said there is a very intimate connection between chronic inflammatory conditions of the breast and tumor formation; and he removed the breast for inveterate chronic mastitis.

Warren suggested Abnormal Involution of the Breast as the most satisfactory name for the condition.

Bloodgood, in 1906, called the condition Senile Parenchymatous Hypertrophy of the Breast, and said it occurs in the breasts of women forty to fifty years of age, his youngest case being thirty-three years of age. It is a single pathologic process—two types: (1) cystic—(carcinoma rare), (2) adenocystic—(carcinoma is frequent). In the adenocystic type the dilated ducts and acini are filled with proliferating epithelial cells. This adenocystic type is the one described by Schimmelbusch; and "carcinoma is so frequent that I believe in every instance the entire breast should be removed, and in some cases both breasts".

In 1921 came Bloodgood's great work on chronic cystic mastitis. He distinguished two types, with eight subtypes, as follows:

1. Single or multiple cysts in chronic cystic mastitis	210 cases
(a) The blue-domed cyst	174 cases
(b) The cyst of the galactocoele type.....	8 cases
(c) The multiple blue-domed cysts in one or both breasts (diffuse cystic disease of the breast)	28 cases
2. Chronic cystic mastitis without large cysts...	140 cases
(d) The non-encapsulated adenomatous area	48 cases
(e) The non-encapsulated area of chronic cystic mastitis, containing one or more minute cysts, or one or more dilated ducts, or both	39 cases
(f) The diffuse dilatation of the ducts, chiefly in the nipple zone, rarely in the breast outside this zone.....	22 cases
(g) The non-encapsulated cystic adenoma	18 cases
(h) The diffuse non-encapsulated cystic adenoma, known in the literature	

as Schimmelbusch's or Reclus' disease, or senile parenchymatous hypertrophy (Bloodgood) ----- 13 cases

In this article, Bloodgood gave special attention to the blue-domed cyst. "Of all the gross types of chronic cystic mastitis, this blue-domed cyst is the easiest to recognize and one of the most frequent in occurrence."

McFarland discussed Residual Lactation Acini in the Female Breast. He said retention of secretion is common, and the result is residual lactation acini—harmless decadent structures, having no significance in respect to subsequent appearance of malignant disease.

In 1922, Bloodgood discussed the clinical picture of the diffuse type of chronic cystic mastitis (Schimmelbusch's disease; the shotty breast); and again in 1929; in 1922 he reported six cases, twenty-four to thirty-seven years of age, and says that when the condition is unilateral, it is safer to perform the complete operation for cancer; but, when it is bilateral, and not associated with retraction of the nipple, operation is not indicated; in 1929 he says that the prevalence of this type of chronic cystic mastitis has increased, and he has come to the conclusion that it is not a pre-cancerous lesion, but that cancer may develop in such a breast, just as well as in any other breast. In 1906 he called it "Senile Parenchymatous Hyperthrophy", and considered it precancerous, with at least a 50 per cent probability that cancer would be associated with it.

Cheatle and Cutler described the condition as Desquamative Epithelial Hyperplasia, of which there are two types: (1) mazoplasia, which is a physiological process; and (2) cystiferous epithelial hyperplasia (chronic cystic mastitis, cystic disease of the breast, etc.). Twenty per cent of all cancers of the breast begin with the cystiferous state; it is difficult to say how much of cystiferous hyperplasia ends in cancer.

Hertzler discussed the condition as Parenchymatous Hyperplasia (chronic cystic mastitis, etc.), and said that true cysts are not a part of the process. Almost one-fourth of cancers of the breast have their origin in these hyperplastic areas. He includes blue-domed cyst in the cysts of the mammary gland.

Eberts said the epithelium of the large cysts is atrophied by pressure, and so is seldom the seat of malignant changes. It is in the smaller multiple

cysts, that is, areas of fine nodulation, that carcinoma develops.

T-3. This is the only specimen we have in our material showing Bloodgood's Type I, single or multiple cysts in chronic cystic mastitis, subtype (c), the multiple blue-domed cyst in one or both breasts (diffuse cystic disease of the breast). The specimen was sent in without any information, and no information has been obtainable. Section is shown in Figure 6.

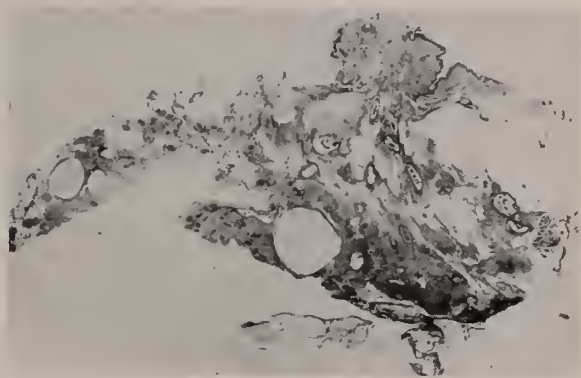


Fig. 6.—(T-3). The feature of this section is the cysts, up to 1 cm. in diameter (they were much larger in the fresh state when distended with fluid); the larger ones with smooth walls lined with a single layer of flattened epithelium, the contents having escaped when the cysts were opened. The smaller cysts are of the same nature, with an occasional papillary infolding of the wall, and at times with homogeneous or granular contents. Many gland fields are in good condition, with the alveoli lined by a single layer of epithelium, frequently in good condition, at times vacuolated—especially the basal cells; in such gland fields, there is lymphocytic infiltration in the loose connective tissue of the gland field. Still other gland fields show one or more alveoli dilated and branched and at times extending beyond the normal border of the gland field, the other alveoli in the gland field showing no change. Nowhere is there piling-up of the epithelium, and very rarely is there accumulation of cellular debris in the lumen of the dilated ducts. The stroma is mature but not dense fibrous tissue, with lymphocytes dotted throughout. There is some fat scattered through the fibrous tissue; but fat is not a feature in this section. The ducts beneath the nipple are dilated, and contain homogeneous or granular material, the walls showing papillary infoldings.

The multiple blue-domed cyst (diffuse cystic disease of the breast), in a breast not markedly involuted, and under estrogenic influence.

T-31. An unmarried white woman, forty-five years of age. For some time she has felt a gradually increasing pain in the right breast. On examination, there was a large mass in the right breast, adherent to the underlying tissues; there was no ulceration. *Clinical Diagnosis:* carcinoma of the right breast. *Operation:* radical removal of the right breast, including the pectoral muscles, and dissection of the axilla. The patient was well and at her duties as a teacher four years after the operation. Section is shown in Figure 7. This is a typical specimen of Bloodgood's Type 2, chronic cystic mastitis without large cysts, subtype (h), the diffuse non-encapsulated cystic adenoma, known in the literature as Schimmelbusch's or Reclus' disease, or senile parenchymatous hypertrophy (Bloodgood).

In these two sections, one sees the difference in the picture of the two types of chronic cystic mastitis of Bloodgood. In Figure 5, one sees the large cysts,

with a lining of very thin flattened epithelium, with no evidence of piling-up of the epithelium in the lumen. In Figure 6, one notes the absence of large cysts, the marked activity and piling-up of the epithelium, and the small cancer in the lower portion of the section. Figure 5 corresponds to Bloodgood's blue-domed cyst, and one does not expect cancer to develop in such a breast. Figure 6 corresponds to Bloodgood's shotty breast, with all of its synonyms, and one expects cancer to develop in a fair number of such breasts: of our 16 cancers of the breast studied by the whole organ section method, three are

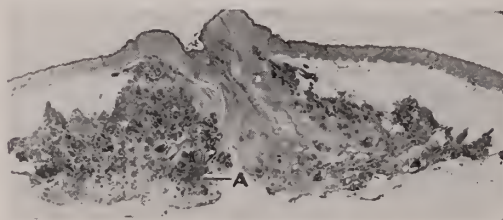


Fig. 7.—(T-31). Below and slightly to the left of the inverted V space, is an area (indicated by A), 6 mm. in diameter, which stains uniformly finely granular. This area is made up of masses of epithelial cells, with considerable loose connective tissue separating the masses of cells. The cell nuclei vary considerably in size, though none are very small or very large; there is rather uniform staining, with very little tendency to adenoid arrangement, and few mitoses. There is moderate fibrosis, and moderate lymphocytic infiltration.

Throughout the breast, the ducts are dilated to extend well beyond the limits of normal gland fields, and are lined with several layers of epithelial cells, with cellular and granular debris in the lumina. Scattered through are normal gland fields, showing lymphocytic infiltration in the loose connective tissue of the gland fields.

Diffuse duct carcinoma of the carcinoma simplex type (Grade II. Sophian), in a breast the seat of chronic cystic mastitis of the parenchymatous hyperplasia (Schimmelbusch—shotty breast) type, under estrogenic influence.

in breasts the seat of this type of chronic cystic mastitis. So, those who say that cancer does not develop in a breast the seat of chronic cystic mastitis are right when they are thinking of the type with large cysts, which includes blue-domed cyst; those who say that cancer does develop in a breast the seat of chronic cystic mastitis are right when they are thinking of the type without large cysts, which includes Schimmelbusch's disease, or the shotty breast.

But, while these two types of chronic cystic mastitis are of special importance in connection with the tendency of cancer to develop in breasts the seat of chronic cystic mastitis, in neither one of them do we find definite lumps in the breast; and this phase of the situation forms an important part of our discussion today. Illustrative cases are as follows.

T-75. A married white woman, twenty-eight years of age; two children. Menstrual periods somewhat irregular; flow profuse. About ten years ago she injured her

breast, and there has been a lump in the breast since that time. Following the birth of her second child the lump began to give more trouble, and was painful at her periods. *Operation:* a single lump was removed from the breast. No X-ray treatment. The patient remains well. Section is shown in Figure 8.

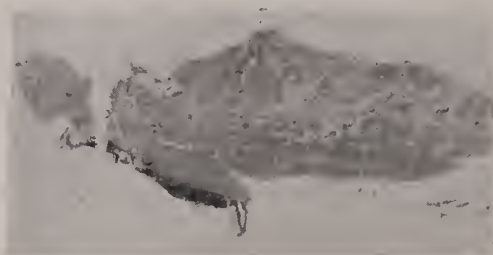


Fig. 8.—(T-75). The section shows no evidence of encapsulation; the dark strip below is an area of loose breast tissue intensely infiltrated with red blood cells. The abundant darker areas through the section are the gland fields, the lighter patches are the mature connective tissue stroma. The gland fields are greatly enlarged, with numerous alveoli, the loose connective tissue of the gland fields showing lymphocytic infiltration.

Non-encapsulated area of adenomatoid hyperplasia (Bloodgood's first subtype in his second type: chronic cystic mastitis without large cysts). There is no evidence of malignancy. It is not a tumor.

This is Bloodgood's Type 2, subtype (d), the non-encapsulated adenomatous area; or, in the present-day nomenclature, non-encapsulated area of adenomatoid hyperplasia. Though frequently spoken of as a fibro-adenoma, it is not a tumor. There is no great tendency for cancer to develop in such a lump: the restlessness and hyperplasia of the epithelium is evident, and such lumps are best removed; but there is no need to remove the breast.

When these areas are more diffuse and not so sharply outlined, they are more of the nature of Bloodgood's Type 2, subtype (e), the nonencapsulated area of chronic cystic mastitis, containing one or more minute cysts, or one or more dilated ducts, or both: we have several breasts of this type which were removed on account of suspected carcinoma. One of these cases is as follows.

T-71. A married white woman, fifty-three years of age. She discovered a painless lump in her left breast. *Clinical Diagnosis:* carcinoma of the breast. *Operation:* she was given a course of irradiation, and then the complete operation was done. Section is shown in Figure 9.

While it is not necessary to remove the breast in these cases of the non-encapsulated area of chronic cystic mastitis, containing one or more minute cysts, or one or more dilated ducts, or both, it is to be noted that of our sixteen cases of carcinoma of the breast studied by the whole organ section method, four were in breasts the seat of this type of chronic cystic



Fig. 9.—(T-71). The dark area is mature fibrous tissue, in which are a few dilated ducts forming cyst-like spaces up to 2 mm. in diameter, lined with one or two layers of epithelium, the walls generally smooth but with an occasional papillary infolding, empty or containing cellular and granular debris. Through the fibrous tissue are gland fields with some alveoli dilated and others filled with epithelial cells, the outline of the gland field indistinct because of the continuity of the connective tissue of the gland field with that of the surrounding stroma. In some areas there is slight to moderate lymphocytic infiltration in and about some of the gland fields.

Non-encapsulated area of chronic cystic mastitis, containing one or more minute cysts, or one or more dilated ducts, or both. There is no evidence of malignancy. It is not a tumor.

mastitis. In one of our cases, almost the entire breast is involved in the process, and simple mastectomy was the most practical procedure.

MANAGEMENT OF LUMPS IN THE BREAST

Since lumps in the breast are so common, it is important to outline some practical method of handling these cases.

Eberts stresses the relation between benign and cancerous lesions of the breast, and says that in any consideration of breast lesions, 99 per cent of one's mental view is blackened out by the thought of cancer.

In an analysis of 1,000 cases of cancer of the breast, by The American Society for the Control of Cancer, the first sign or symptom was as follows:

First Sign of Symptom	No. of Cases	Percentage
1. Lump in the breast	740	74
2. Pain in the breast	66	6.6
3. Enlargement of the breast	53	5.3
4. Retraction of the nipple	26	2.6
5. Lump in the axilla	18	1.8
6. Bleeding from the nipple	14	1.4
7. Pain in the axilla, arm or shoulder	14	1.4
8. Backache	14	1.4
9. Erosion of the nipple	13	1.3
10. Ulceration of the breast	10	1.0
11. Inflammation of the breast	10	1.0
12. Swelling of the arm	6	0.6

13. Skin nodules	6	0.6
14. Pruritis of the nipple	5	0.5
15. Supraclavicular lump	3	0.3
16. Dimpling of skin of breast	2	0.2

1,000 100

While the great majority of lumps in the breast are not cancer, we see from the above tabulation that a lump in the breast is the first sign in the great majority of cancers.

As I said in the beginning, when a woman with a lump in her breast consults a physician, the case must be considered just as much of an emergency as though a patient had consulted him with a fresh fracture; and what to do must be determined at once.

There is frequently confusion as to whether or not a lump is benign; whether it is a periductal fibroma or an area of non-encapsulated chronic cystic mastitis, or an area of interstitial fibrosis. All of us meet this difficulty; and McFarland has discussed it at some length. The age of the patient, the nature of the lump, and the condition of the surrounding breast, are important factors in reaching a decision.

(a) Benign.

Periductal Fibroma may be left alone, but should be watched; and if it continues to grow, as it generally will, or if it worries the patient with fear of cancer—as it frequently does—the question of re-

moval has to be considered. As systosarcoma phylloides grows rapidly, and often reaches considerable size; and, as sarcoma has developed on the basis of a few of these growths, this type of fibroma had best be removed. Removal of the tumor is sufficient.

Duct Papilloma must be differentiated: it usually occurs in older women (though our illustrative case was twenty-nine years of age); the nature of the lump and its relation to the nipple, and especially the presence of bloody discharge from the nipple; and the condition of the surrounding breast (often chronic cystic mastitis—but not necessarily), are factors in differentiation. Duct papilloma had better be removed, especially if the discharge from the nipple contains fresh red blood cells, on account of the tendency to malignant change. It is not necessary to remove the entire breast.

Areas of *Non-Encapsulated Chronic Cystic Mastitis, of the Adenomatoid Hyperplasia type*, or the *Minute Cyst* type, occur in older women, frequently with chronic cystic mastitis throughout the breast—usually both breasts. These areas need not be removed, unless they worry the patient with fear of cancer; but it is to be borne in mind that four of our cases of cancer are in breasts the seat of the minute cyst type of chronic cystic mastitis. These areas are quite frequently to be considered as to whether or not they are cancer; so they require discussion from that standpoint.

(b) *Doubtful.*

When the nature of the lump is in doubt, it should be removed, through normal breast tissue, and opened and examined at once—at one side from the operating table. If the gross appearance shows it to be cancer (and the experienced surgeon can tell in upward of 95 per cent of the cases on gross examination), the complete operation is done at once. If the lump is not cancer, and the surrounding breast tissue shows no need for further removal, nothing further is done.

Whenever any lump is to be removed from the breast, all arrangements and preparations must be made beforehand to proceed with the complete operation if the lump proves to be cancer. It is important that an experienced pathologist be in consultation at the operating room, to aid the surgeon, and to divide the responsibility, in determining the nature of the mass removed, and the further procedure.

The confusion regarding the nature of some lumps in the breast has already been noted. Case T-71,

noted above, illustrates this point. From the pathologist's report in this case, we see that the lump was not cancer. We have other cases in our material which illustrate this same point; and our experience is not different from that of any other pathologist. In some of our cases, a simple mastectomy was done; in other cases, preoperative irradiation and the complete operation was done. In the absence of some special conditions, the lump should be removed in such cases, examined at once, and the further procedure determined by the nature of the mass removed. Such a procedure saves the woman from the more severe operation of mastectomy or the complete operation if the lesion is benign.

If the lesion is benign, conservatism is the rule.

(c) *Cancer.*

If the lesion is malignant, nothing short of the complete operation is to be done (except where only palliation, or the removal of a fungating ulcerating mass is to be done, or some other determining conditions exist); that is, radicalism is the rule. When one considers the course of metastasis in cancer of the breast,* it is evident that one must go as far as possible in removing possibly invaded tissues, which means removal of the pectoral fascia with its lymphatic plexus, and removal of the lymphatics as far as possible toward the gastric angle, with removal of the pectoral muscles, and cleaning out of the nodes in the axilla and about the clavicle. Consideration of the lymphatic drainage of the breast will aid in determining the probable direction of metastasis, according to the location of the cancer in the breast: outer half, to the axilla; upper—and especially upper inner—portion, to the infra-clavicular, and rarely direct to the supra-clavicular nodes; inner portion, through the chest wall to the nodes along the internal mammary vessels; lower inner portion to the abdomen, through the gastric angle—going to the liver by way of the falciform ligament, when the cancer is in the right breast. One must stress that this indicates only the probable route and direction of the metastases.

Whether or not pre-operative irradiation should be used in the case of single lumps in the breast seems to be a matter of individual preference on the part of the physician. Pfahler's studies do not indicate any advantage in pre-operative irradiation over operation alone in cancer confined to the breast. The claim that

*This phase of the subject has been discussed elsewhere: *Boletín Científico de la Liga contra el Cáncer*, 15, 105 (May-June), 1940.

irradiation closes the lymphatics and lessens the danger of dissemination of cancer cells during operation, as well as destroys many of the cancer cells, is sound. On the other hand, if the lump proves to be benign, the patient has been submitted to a needless course of irradiation.

Let us repeat: whenever a lump is to be removed from the breast, all arrangements and preparations must be made for doing the complete operation, if the lump proves to be cancer. It should be a hospital requirement that any breast removed, or any lump removed from the breast, shall be examined by a competent pathologist when removed, and proper record kept.

One great advantage of the tumor clinic is that it provides for the pooling of the knowledge, experience, and judgment, of the pathologist, the radiologist, and the surgeon, thus giving the patient the benefit of all of that. The responsibility of deciding does not rest on one man. But, when a lump is to be removed, then it must be understood that the surgeon is the one who decides what further to do, based on what is found in the lump. It does not do to remove the lump, find it carcinoma, and then wait until some days later to do the complete operation.

DISCUSSION

Greater care is necessary in using the terms "adenoma", "adenofibroma", and such terms which mean tumor. Many of the lumps in the breast, reported as adenofibroma, are not tumors, but are Bloodgood's non-encapsulated area of chronic cystic mastitis, or his non-encapsulated area of adenomatoid hyperplasia, or Hertzler's interstitial fibrosis or hyperplasia, or are areas of involuting breast tissue. The term "adenofibroma" has come to be a clinical term for various types of lumps in the breast, without reference to whether or not it is a neoplasm.

From the time of Cooper, cysts have been considered a feature of the condition which we now call chronic cystic mastitis, different authorities considering the cysts of different importance. Virchow noted the lymphocytic infiltration in the interstitial connective tissue, and to him this meant inflammation; hence, the name, interstitial mastitis. He thought the epithelial hyperplasia was secondary. There have always been many names for the condition: the first time I find "Chronic Cystic Mastitis" is by König in 1893. Reclus said cysts in the breast are very common, recognized the condition as bi-

lateral, and said that nodular and cystic disease were one and the same affection. Billroth noted the frequency of cysts in the involuting breast; Schimmelbusch said that the condition he described as cystadenoma is different from the senile or involution cysts of the breasts in older women, in which there is only one or two cysts; and Hertzler puts blue-domed cyst in a separate chapter (Cysts of the Breast) from chronic cystic mastitis.

The question of the association of chronic cystic mastitis and cancer has always been in the forefront: one of Cooper's cases had a cancer of the breast; one of Schimmelbusch's cases developed cancer of the breast, and he cited three cases of cancer in forty-three reported cases of chronic cystic mastitis; König found a co-existing mastitis in some cases of cancer of the breast, and said that papilloma and carcinoma apparently develop in a mastitis breast more frequently than in a healthy breast; Cheatle and Cutler say that 20 per cent of all cancers of the breast begin with chronic cystic mastitis, but do not know how many cases of chronic cystic mastitis develop cancer; Hertzler says that almost one-fourth of cancers of the breast have their origin in areas of chronic cystic mastitis; Eberts says that at the Montreal General Hospital, between 20 and 30 per cent of the whole breast sections from frank carcinoma of the breast show, in association with the cancerous lesion, cystic and papillomatous changes throughout those portions of the breast not involved in the malignant process.

McFarland said that chronic cystic mastitis has no relation to cancer of the breast; and Bloodgood, in the beginning considering chronic cystic mastitis of the parenchymatous hyperplasia type as a pre-cancerous condition, changed to think it had no causal relation to cancer of the breast.

It seems that Bloodgood's first type of chronic cystic mastitis (single or multiple cysts) has been considered as involution cysts; and Schimmelbusch said that involution cysts have nothing to do with his cystadenoma, which is Bloodgood's eighth subtype (second type: chronic cystic mastitis without large cysts), later called "shotty breast" by Bloodgood. This last subtype is the one formerly called senile parenchymatous hypertrophy by Bloodgood, and called parenchymatous hyperplasia by Hertzler. This seems to be the subtype which is more likely to be associated with cancer.

We have only one specimen showing the large cysts of Bloodgood's first type; and there is no cancer in this breast (T-3, Figure 6). When one examines this section, he is struck by the absence of any of the restlessness of the epithelium which is characteristic of the parenchymatous hyperplasia type of chronic cystic mastitis. It is not that the cysts protect from cancer: in the breast with large cysts, the epithelium is not reacting in the same way as in the parenchymatous hyperplasia type of chronic cystic mastitis. It is like we hear of some people who are too neutral and too apathetic to get into trouble.

So, in considering the question of the relation of chronic cystic mastitis to cancer, one must consider the subtypes of chronic cystic mastitis without large cysts, especially the parenchymatous hyperplasia type (shotty breast). This is definitely the type considered by Hertzler. Of our sixteen cases of cancer of the breast studied by whole organ sections, there was chronic cystic mastitis in seven; all in Bloodgood's second type—without large cysts; three in shotty breasts, and four in breasts with few minute cysts or dilated ducts. A recent case illustrates the point: a thirty-four-year-old woman, with shotty breasts, noted a painless lump in one breast; this lump was considered benign by several consultants, but they advised that it be watched; the lump gradually grew larger, and in four months was removed, and proved to be highly malignant cancer. This experience, together with the opinions held at various times by various men in the past regarding the nature of this type of chronic cystic mastitis, makes us feel that a single lump in the breast of a woman with shotty breasts had best be removed and examined, without delay.

Reclus said there are different lesions in different parts of the breast; and the whole organ section method enables us to study these different lesions in different parts of the breast, in relation to one another, and to the nipple. One of our cases illustrates this point.

T-14. A married white woman, seventy years of age. Two years before coming to the hospital, she discovered a lump the size of a hickory nut in the upper outer quadrant of the left breast. There was no pain. The lump slowly increased in size; and in the past several months she has noticed a tingling sensation in the left breast. One year ago, she consulted a physician, who advised that the lump be removed; but she did not accept his advice. She first noticed dimpling of the skin over the region of the lump two or three months ago.

She came to the clinic six weeks ago, where X-ray treatment, followed by operation, was advised. There were no enlarged axillary nodes. She was given a series of X-ray treatments, followed which the mass contracted and retracted. *Clinical Diagnosis:* carcinoma of the left breast. *Operation:* mastectomy, without removal of the pectoral muscles or dissection of the axillary nodes. The patient was discharged from the hospital, eleven days after the operation, in good condition. She was well until thirteen months after the operation, when a palpable node was found in the left axilla: she was given a series of X-ray treatments over the node, with no change in the size of the node. Seventeen months after the finding of the palpable node in the left axilla, the right breast was removed: microscopically it showed cancer. Eight months later, she died; and autopsy showed extensive metastases to the thoracic walls and viscera. Section of the left breast is shown in Figures 10 and 11.

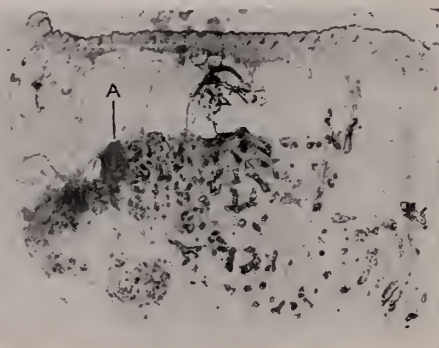


Fig. 10.—(T-14). Toward the left end of the section is a darker staining area (indicated by A), 8 X 22 mm., in which groups of epithelial cells are scattered freely through a fibrous stroma. The nuclei of these epithelial cells are not large, are quite uniform in size, some of them moderately hyperchromatic; there is some tendency to adenoid arrangement; mitoses are rare. There is quite marked fibrosis, and marked lymphocytic infiltration.

Through the rest of the section the normal gland fields are replaced by dilated ducts, more or less completely filled with granular debris, often more or less completely lined by several rows of epithelial cells. The circular area below, 17 mm. in diameter, is an intracanalicular periductal fibroma, the ducts of which contain the same granular debris as do the ducts throughout the breast.

In an occasional area are a few normal gland fields, one such area being shown in Figure 11.

Diffuse duct carcinoma, of the carcinoma simplex type (Grade II, Sophian), in a breast the seat of chronic cystic mastitis of the parenchymatous hyperplasia (shotty breast) type, under estrogenic influence. Intracanalicular periductal fibroma.

This case is a mine of thought-provoking and valuable information. A lump in the breast; two years delay on the part of the patient; pre-operative irradiation, followed by simple mastectomy, with actively growing cancer cells in the lesion in the removed breast (and a small intracanalicular periductal fibroma deep in the breast); followed by the appearance of a palpable lymph node in the axilla, metastases to the lungs, and death: all extending over a period of five years. Some gland fields in this breast show that the breast was under the influence of an estrogenic substance: whether this be continuation of secretion of estrin by the ovaries of a seventy-year-



Fig. 11.—(T-14). Photomicrograph of an area showing normal gland fields in T-14. Above (crossed by the line) is a normal gland field, the terminal ducts being the alveoli; the loose connective tissue of the gland field showing lymphocytic infiltration. Slightly below and to the right of this gland field is another normal gland field showing the same features. In the lower portion of the figure are dilated ducts filled with granular debris, occupying and extending beyond the entire areas of their gland fields.

old woman, or the substitution of an estrogenic substance by some other organ, is of interest. It has been shown by Salmon that the adrenal cortical hormone has estrogenic action in some animals, and in woman; and it is suggested that, after the cessation of ovarian activity, or removal of the ovaries, estrogenic action is taken over by the adrenal cortex.

In T-59 (Fig. 1), as noted above, we see different conditions in different parts of the breast when studied by the whole organ section method.

SUMMARY

1. Caution is required in the naming of fibro-epithelial tumors. The term "adenofibroma" has come to be a clinical term, without reference to whether or not the lump is a tumor. The *periductal fibroma* is generally benign, though sarcoma has developed in a few of the rapidly growing *cystosarcoma phyllodes type*. *Duct papilloma* must always be suspected, especially if the discharge from the nipple contains fresh red blood cells.

2. The development of our knowledge of what is

known as chronic cystic mastitis is surveyed. In our case T-14 (Figures 10 and 11) we see the lymphocytic infiltration of the connective tissue in and about the gland fields. This is what led Virchow to consider the condition inflammatory—hence, mastitis; and which we now know means that the breast is under estrogenic influence.

3. In studying our specimens of cancer of the breast, using the whole organ section method, we find that some of the cancers are in breasts the seat of the parenchymatous hyperplasia (shotty breast) type of chronic cystic mastitis; and that some of them are in the non-encapsulated area of chronic cystic mastitis, containing one or more minute cysts, or one or more dilated ducts, or both. In none of our cases of cancer are there large cysts in the breast; and in our only specimen of breast with large cysts (T-3, Fig. 6) there is none of the restlessness of the epithelium that we see in sections of the other types of chronic cystic mastitis.

In addition, three of our specimens which were

removed as cancer, and in which whole organ sections do not show any cancer, were this non-encapsulated area of chronic cystic mastitis, with minute cysts.

4. So, it appears that a single lump in the breast of a woman with shotty breasts had better be removed and examined; and the non-encapsulated area of chronic cystic mastitis with minute cysts must be borne in mind, in considering whether or not a lump in the breast is cancer. It is not necessary to remove the breast: the lump is removed, and further procedure determined by the immediate examination of the tissue removed.

One may paraphrase Ebert's statement regarding breast lesions, and say that in any consideration of "chronic cystic mastitis", 99 per cent of one's mental view is blackened out by the thought of blue-domed cyst. The fact is that, in considering the relation of chronic cystic mastitis and cancer, one must consider Bloodgood's second type—without large cysts.

5. Physicians are very frequently consulted for lumps in the breasts of women; and such cases are to be considered as emergency cases: prompt steps must be taken to determine the nature of the lump, and proper treatment must be instituted at once. In general, periductal fibromas do not need to be removed, unless their size, or worry of the patient regarding cancer, make it advisable to remove them; but cystosarcoma phyllodes had better be removed. Duct papilloma should be removed. It is best to remove any single lump developing in the breast of a woman with shotty breasts. The non-encapsulated area of chronic cystic mastitis with minute cysts confuses, and such breasts are not infrequently removed as carcinoma.

In doubtful cases, or whenever a lump is to be removed from the breast, arrangements and preparation must be made to do the complete operation if the lesion proves to be cancer. If the lump is benign, nothing more than the removal of the lump is necessary; and this is not a serious operation for the woman. All hospitals should require that every breast removed, and every lump removed from a breast, be promptly examined by a competent pathologist, and proper record kept.

6. Use of the whole organ section method enables us to study the different conditions in different parts of the breast; ducts beneath the nipple; the gland fields throughout the breast; cancer in its relation to the surrounding breast and extension in the fascial

plexus; and the development of various lesions in the breast. Thus, in one breast we find normal gland fields under estrogenic influence; other fields with the alveoli dilated and filled with cellular debris; small cysts; a small intracanalicular periductal fibroma deep in the breast; and a cancer: all in the same section. In another section we find dilated ducts beneath the nipple; small cysts and dilated ducts in the substance of the breast; two nodules of cancer; and the beginning formation of the ingrowths of the alveolar walls and of the capsule or sharp line of cleavage in the early development of intracanalicular periductal fibroma.

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THE MANAGEMENT OF THYROGLOSSAL CYST: REPORT OF TEN CASES.*

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A survey of the 8,412 admissions to the Gill Memorial Eye, Ear and Throat Hospital during the past fifteen years reveals that in ten instances a diagnosis

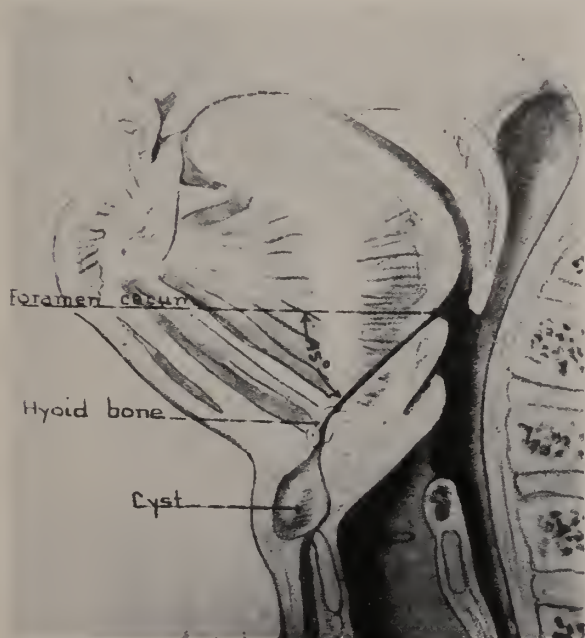


Fig. 1.—Cross section showing the relations of the cysts and fistulas of the thyroglossal tract. (Sistrunk).

of thyroglossal cyst or fistula was recorded. This number of cases is relatively small in comparison with the numbers which have been reported from

some of the larger clinics in this country, as well as abroad; however, we feel that the data which we have accumulated in the study of these cases will prove of importance to those specializing in the head specialties. The diagnosis and surgical management will be stressed.

The embryology of the thyroid gland will not be reviewed, but to the student of this subject the work of Wenglowski¹ and Morris will prove valuable. The foramen cecum marks the origin of the thyroid gland. The thyroglossal tract is formed by the descent of the thyroid gland in the mid-line of the neck. This tract normally disappears during fetal life; however, when it does not, a cyst or fistula may occur. The writer accepts the views of Clute and Cattell,² that all thyroglossal sinuses and fistulae openings on the neck are secondary to pre-existing thyroglossal cysts, and for this reason all of our cases are discussed together. A thyroglossal cyst is a retention cyst lined with epithelial cells which are prone to become inflamed.

Anomalies of the Thyroglossal Tract.—When the tract remains patent, the following anomalies may occur, depending upon the location and extent of the thyroglossal duct and vestiges:

1. Lingual thyroid gland due to failure of thyroid gland to descend into the neck.
2. Myxedematous babies, with no development of thyroid tissue, may have only a cystic mass at the foramen cecum.

*Read before the American Laryngological, Rhinological, and Otological Society, in New York City, June 3, 1940.

3. Where thyroid gland descends partially into the neck, forming a solid tumor of thyroid tissue between the thyroid cartilage and hyoid bone or above the hyoid bone. Before removing this tissue, care should be taken to ascertain if other thyroid tissue is present; otherwise, myxedema may result.

4. The most common anomaly is a thyroglossal cyst, presenting either in the mid-line or at the foramen cecum.



Fig. 2.—The dissection has been completed, and the foramen and the cecum are exposed.

5. Bailey³ reported two cases, and Neris⁷ six cases of true congenital fistula opening into the base of the tongue.

The ten patients in this report have been followed from three to fourteen years.

Age.—The youngest patient in this series was two and one-half years old and the oldest was forty-seven years.

Age Group	No.
1-10 years	3
10-20 years	3
20-30 years	3
30-40 years	0
40-50 years	1

Sex.—In this series of patients, five were male and five were female. Clute and Cattell² found thirty-eight females and twenty males in fifty-eight patients, while Klingenstein and Colp⁴ found thirty-

one male and eleven females in forty-two cases, and Bailey³ found seventy-two females in one hundred and seventeen cases.

Duration.—In six of our ten cases the cyst or sinus appeared before the age of twenty; in three before the age of thirty, and in one after the age of forty. These findings are in accord with other reports.

The duration of the lesion before operation varied from six weeks to seven years. The youngest children's ages were two and one-half and four years, respectively; and in the oldest, age forty-seven, the cyst was at the foramen cecum.



Fig. 3.—The middle segment of the hyoid bone is removed and the thyroglossal tract is dissected. (Sistrunk).

Pathology.—In this group there were eight cysts and two fistulae. The cysts varied in size from small palpable tumors to one which was thirty-five centimeters round. The contents of the cysts were of a gelatinous material containing epithelial cells and cholesterol crystals, except in the cases in which infection was present; then the contents were of a purulent nature.

The microscopic appearance showed the cyst walls to be lined with epithelial cells. Malignancy or osteomyelitis of the hyoid bone was not encountered in any of our cases.

Symptoms.—These lesions rarely produce annoying symptoms, such as choking sensations, difficulty in swallowing or breathing. Frequently, the only complaint is the appearance or the offensive dis-

charge. In our series, only one patient had annoying symptoms; this was in the case of a male adult, aged forty-seven, who complained of difficulty in swallowing and dyspnea at nights. He had a cyst at the foramen cecum the size of a hen's egg. The cyst was removed and the patient has been well after fifteen years.

Diagnosis.—The classical clinical picture of the cyst is that of a soft, fluctuating mass, painless, moving upward with deglutition, connected with the hyoid bone, and occupying a mid-line position. The aspirating needle affords a safe and reliable diagnostic procedure. If the aspirated material contains epithelial cells and cholesterol crystals, one may be certain of the presence of an embryological defect.

Differential Diagnosis.—We must consider:

1. Inflammatory and tuberculous adenitis;
2. Hygroma;
3. Thyroglossal duct;
4. Hemangioma;
5. Lipoma;
6. Dermoid cyst.

(a) Inflammatory adenitis is often bilateral, and numerous glands are involved. They are tender and the focus is usually in sore throats, tonsils and teeth. Tuberculous glands may be more readily confused with cyst and fistula, but they are firm and tender, and other glands are usually involved and often matted together in a group. The discharge from the fistula in broken down glands is purulent, while in thyroglossal cyst or fistula it is clear mucoid or milky and may contain cholesterol crystals.⁵

(b) Cystic hygroma is translucent, occurs most frequently in the supraclavicular area, is often lobulated, and may grow to enormous proportions, extending up into the face in front of the ear.⁵

(c) The thyroglossal duct occurs invariably in the mid-line and moves up on swallowing.

(d) Hemangiomas decrease in size on pressure and have the typical discoloration.

(e) Lipomas are lobulated, soft, and non-fluctuatory.

(f) Dermoid cysts do not move with deglutition. If clinical examination is not satisfactory, aspirate contents and examine microscopically for epithelial cells and cholesterol crystals.

The treatment is strictly surgical. Cautery and sclerosing fluids are mentioned only to be condemned. Any method other than radical surgery results in recurrences.

In all of our cases we have followed the operative technique described by Sistrunk.⁶ Briefly, it consists of a complete removal of cyst, the resection of a portion of the hyoid bone, and the "coring" out of the small friable duct with the tissues surrounding it for a distance of about one-eighth of an inch—up to the foramen cecum.

Two of our patients had been operated upon prior to our examination. One, a boy, aged sixteen, had two excision operations to the hyoid bone. The other, a girl, aged twenty-one, had an incision and drainage for a supposedly infected gland on two occasions.

Some surgeons advise injecting methylene blue, radiopaque material, to outline the tract before surgery. We have not found these procedures necessary since adopting the technique of Sistrunk.⁶

Results.—We have had no operative mortality, recurrence, or complication, such as osteomyelitis of hyoid bone, thickening of scar, or paralysis of side of the tongue due to trauma to the hypoglossal nerve, as reported by some authors.

CONCLUSIONS

Ten cases of thyroglossal cyst and sinus are reported. In seven cases the lesion was in the mid-line of the neck between the hyoid bone and thyroid cartilage; in the remaining three at the foramen cecum. The condition is not difficult to diagnose, but the failure on the part of the surgeon to consider a cyst as a possibility is the answer to many errors in diagnosis.

While these cysts and sinuses are relatively rare, they do occur often enough to merit consideration. Any single mid-line tumor or sinus between the hyoid bone and thyroid cartilage which moves with swallowing should suggest the possibility of a thyroglossal cyst. The aspirative needle offers a safe and dependable means of diagnosis. This simple procedure should be emphasized, as it is the most valuable single diagnostic method available. In bronchial and thyroglossal cyst the aspirated material is mucoid and milky in appearance, while in cystic hygroma the material is clear or straw colored. If the microscopic examination reveals epithelial cells and cholesterol, one may be certain of the presence of an embryological defect.

Once the diagnosis is established, the only treatment to be considered as radical surgery, employing the technique described by Sistrunk.⁶ Incision and drainage is justifiable in the presence of infection,

but with the positive understanding radical surgery will be necessary to effect a complete cure.

Regardless of the innocent clinical appearance of a cyst or sinus, the tissue removed should be submitted to a competent pathologist for examination, as the possibility of early malignancy should be considered.

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ANEURYSM OF THE ABDOMINAL AORTA— REPORT OF A CASE OF RUPTURE INTO THE DUODENUM.

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Aneurysm of the abdominal aorta, excluding the dissecting variety, is itself relatively uncommon, but when rupture occurs into the gastro-intestinal tract the condition becomes a rarity. The purpose of this paper is to review briefly the recent literature and to report a case.



Kampmeier¹ in a thorough review of the subject in 1936 found 313 cases of abdominal aneurysm in the literature and added sixty-nine cases from the records of Charity Hospital, New Orleans. Of the total number, he found ten which had ruptured into the gastro-intestinal tract, including one of his own—an aneurysm of the celiac axis rupturing into the stomach.

Lipshutz and Chodoff² in 1939 reported two cases of abdominal aneurysm and found forty-one cases in the literature since Kampmeier, bringing the total

number of reported aneurysms of the abdominal aorta to 429.

Scully³ in 1936 reported a case of a sacculated aneurysm on the anterior surface of the aorta on a level with the renal vessels which ruptured through a small pin point opening into the duodenum which was adherent at this point.

Interesting, but not strictly relevant to this paper, is the case reported by Washburn and Wilbur⁴ of an abdominal aneurysm pressing upon the duodenum, causing obstructive symptoms, relieved by posterior gastro-enterostomy.

Manson⁵ in 1937 described a case of fatal gastro-intestinal hemorrhage caused by rupture of a small saccular dilatation of the aorta into the third portion of the duodenum. This occurred in a seventy-six-year-old man with a markedly atheromatous aorta. The sac was adherent to the duodenum which latter organ showed no evidence of any inflammatory thickening of the wall, such as might be caused by ulcer.

Neely⁶ in 1937 reports the case of a fifty-nine-year-old male in whom a fusiform aneurysm at the bifurcation of the aorta perforated posteriorly, giving rise to an enormous retroperitoneal mass, which at its superior margin became densely adherent to the duodenum. Subsequent extension of the hemorrhage broke through into the transverse portion of the duodenum and filled the upper gastro-intestinal tract with blood.

Finally, Roach⁷ in 1939 describes the case of a sixty-two-year-old woman, troubled for ten years with epigastric pain, who suffered a sudden fatal hematemesis caused by a dissecting aortic aneurysm which eroded through the third portion of the duodenum. This author quotes another by the name of Ahava, who in 1928 said he had found eighteen cases with rupture into the gastro-intestinal tract in the literature, of which fourteen were into the duodenum. At most, then, there are probably less than twenty-five cases reported to date.



Incidence.—In Kampmeier's¹ series of abdominal aortic aneurysms, 80 per cent were in negroes, and 83 per cent were males. Most occurred in individuals of about middle age, but more than a third of the cases were under thirty-five years and only one was over sixty-five years. The great majority did hard physical work. In a series of sixteen cases collected by Falls⁸ at the Cook County Hospital, Chicago, twelve occurred in men, of whom eight were negroes. Three of the women victims were colored.

Etiology.—A great difference of opinion exists in the literature as to etiology. Kampmeier¹ believes

that syphilis is "the most frequent specific agent". Minor⁹ states that "well over 75 per cent of abdominal aneurysms are due to lues", but admits that in the higher age groups, and especially when associated with hypertension, it is due to atheromatous change. Tuberculosis and trauma are also cited by some as uncommon causes. Of eleven cases in which rupture occurred into the gastro-intestinal tract and where sufficient data is recorded, syphilis was considered to be the cause or to play a questionable role in five cases, whereas arteriosclerosis was taken to be the whole or an important factor in ten. Jump and Leaman¹⁰ state that "syphilis plays a very unimportant part in the etiology of abdominal aneurysm in the older age groups. Arteriosclerosis is the most important factor." It is evident that statistics of individual clinics vary greatly according to the racial and economic groups encountered and the incidence of untreated syphilis.

Symptoms and Signs.—The principal symptom of abdominal aneurysm is pain, usually constant, often throbbing, usually epigastric but sometimes in the back, chest, thighs and knees and usually radiating downward. Other symptoms may be tumor, indigestion, nausea and vomiting, weight loss. There may also be any one of widely variant complaints due to complications of the aneurysm, such as retroperitoneal or peritoneal rupture, pressure on the ureter, pressure on the duodenum, rupture into the pleural cavity through the diaphragm or into the psoas sheath—simulating thoracic or psoas disease—rupture into the vena cava, spinal erosion with pain in the back or legs, dissection with pressure on the iliac arteries—followed by gangrene—or rupture into the gastro-intestinal tract.

The finding of an expansile pulsating abdominal mass with bruit and thrill is pathognomonic and is usually evident. Other findings sometimes present, as listed by Kampmeier,¹ are fullness of the abdomen, occasionally with visible pulsations, tumor in the back, dilated veins over the abdomen, abdominal tenderness and rigidity. Roentgenograms of the spine may show pressure erosion of the vertebrae, sparing the intervertebral discs.

Differential Diagnosis.—This is for the most part exclusion of a legion of other conditions, such as accentuation of the normal aortic pulsation especially in thin people with advanced arteriosclerosis, spinal arthritis, neoplasms of the liver, stomach, pancreas,

kidney, retroperitoneal lymphoma. If rupture occurs, then the differential diagnosis includes most of the acute abdominal catastrophies.

Prognosis.—Kampmeier¹ states that most of these patients die within six months after the diagnosis is made, death being due usually to retroperitoneal rupture. A few cases have lived after wiring, but none after rupture has occurred.

Pathology.—For the purpose of this paper, aneurysms may be divided into two types: (first) the saccular or fusiform outpouchings of the vessel wall, and (second) the dissecting variety which starts suddenly as a tear in the intima just above the aortic valve ring and progresses rapidly down the aorta almost always between the middle and outer thirds of the media. In the latter type of aneurysm, rupture when it occurs is usually into the pericardium, very, very rarely below the diaphragm, and then it is retroperitoneal. The first type of aneurysm represents a more gradual sequence of events. Here one finds a well formed cavity, usually rough walled because of the laminated blood clots which partially fill it. In the saccular form, which is the more common, there may be only a very small opening where the sac communicates with the aorta. In elderly individuals, the aorta is usually very markedly arteriosclerotic, especially where the aneurysm arises, and it is usually evident that the wall gave way and ballooned out through a degenerated atheromatous plaque. This particular type of aneurysm does not usually attain great size before rupture occurs. Where syphilis is the etiological factor and the age incidence younger, as in Kampmeier's¹ series, the aneurysms are larger. This investigator states that the sac is usually the size of an orange or grapefruit and almost always arises from the upper abdominal aorta, between the renal artery and the diaphragm. Other writers do not make mention of this predominance of the upper abdominal aorta as the site of aneurysm. As stated above, rupture is usually retroperitoneal, but may occur into the peritoneal cavity and more rarely between the leaves of the diaphragm, through the diaphragm into the pleural cavity, or into the mediastinum, into the gastro-intestinal tract, or into the inferior vena cava.

REPORT OF CASE

The patient, a seventy-seven-year-old white male, was admitted to the hospital just after midnight on April 17, 1940. He was said to have been remark-

ably well and active until about a week before when he complained of "indigestion" and vomited on one occasion, the vomitus being not remarkable. He remained fairly well until the morning before admission when he was suddenly seized by upper abdominal pain and began vomiting large amounts of a black material which was assumed to be blood by those who saw it. This continued at frequent intervals throughout the day and on the night of admission, he passed a very black liquid bowel movement. He became very weak and pale, and a physician was called who advised hospitalization. He had had no gastro-intestinal complaints other than constipation previous to his present illness. There had been no dyspnea, edema, or chest pain. The above history was obtained for the most part from a member of the patient's household, as it was not deemed practical to try to elicit a detailed story from the patient himself.

The physical examination revealed a well developed and nourished elderly white man, looking younger than his stated age, lying flat in bed in no apparent pain. He appeared very pale. The finger tips were slightly cyanotic. Respiration was moderately rapid and deep. He yawned occasionally and complained of feeling weak and sleepy, and asked that he be left alone. The skin was pale, clear, warm and moist. The head, eyes, ears, nose and throat were not remarkable. The chest was clear anteriorly and laterally. The apex impulse of the heart could not be located but the borders were percussed within normal limits. The sounds were rather distant and of poor quality. Rhythm was regular and no murmurs were heard. The blood pressure was 80 systolic, 50 diastolic. The peripheral vessels were sclerotic. The abdominal findings are recorded just as they were written on the clinical record: "Flat, symmetrical, soft, non-tender. Indefinite mass just above and to the right of the umbilicus, presumably in transverse colon. This mass transmits the aortic impulse very forcibly, when palpated. Liver not felt and no masses felt in the epigastrium. Bilateral indirect inguinal hernia evident on coughing." It might be added that on admission, the examiner was struck by the marked pulsation of the mass and tried to conceive of the aorta being the source of the hemorrhage, but dismissed this as preposterous because the bleeding had occurred into the gastro-intestinal tract. Then, too, the abdomen was scaphoid which

made it seem likely that the pulsation was due only to a transmitted aortic thrust. No expansile quality to the pulsation was noted, although this was not specifically looked for. The genitalia and extremities were negative. Rectal examination was omitted and the reflexes were not tested. The temperature was 99.2° F., the pulse 94, and the respirations 26. The clinical impressions were carcinoma of the stomach, carcinoma of the large bowel, rupture of esophageal varices, bleeding peptic ulcer.

It was decided to wait until morning before transfusing and the patient was given 2,000 cc. 5 per cent glucose in normal salt solution, intravenously. One-half hour later, the patient became restless and was given morphine gr. 1/6. Two hours after the infusion was started and when it had almost all entered the vein, he was observed to be breathing with difficulty and shortly afterward went downhill rapidly and died. A great quantity of dark red feces was found in his bed.

Autopsy.—This was performed by Dr. Frank B. Lynch, Jr., who also gave the histologic descriptions.

The chest contained about 200 cc. of almost colorless fluid. The right lung was adherent by firm fibrous adhesions on the posterior and diaphragmatic surfaces. The lower lobe of the right lung was almost solid with blood, but there was no true consolidation. Elsewhere in the dependent portions, the lungs were of a doughy consistency and on sectioning were found to be filled with a frothy, serous fluid. The upper lobes were crepitant and had a shotty feel from what appeared to be multiple healed tubercles.

The heart was normal in size and appearance. There was a very moderate degree of calcification of the aortic valve leaflets. The coronaries were firm and tortuous, but patent. A moderate degree of atherosclerosis was present in the arch of the aorta.

The liver was small and somewhat pale and on the anterior surface there was a definite plaque of peritoneal thickening.

The spleen was normal in size, but quite wrinkled. It appeared quite pale and the pulp was almost devoid of red cells.

The gastro-intestinal tract was markedly distended with blood, in various stages of clotting, throughout its length except for the ileum and rectum. The blood in the colon formed almost a perfect cast. In the second portion of the duodenum, there was a very

marked dilatation and the duodenum and upper jejunum seemed to have undergone a partial volvulus which had not, however, caused sufficient constriction to interfere with the circulation. In the duodenum about 2 cm. below the ampulla of Vater, there was a perforation connecting with a saccular aneurysm of the aorta 3 cm. in diameter. This was almost filled with organized laminated blood clots, and it was apparent that the aneurysm had eroded through into the intestine. The opening of this aneurysm, where it arose from the aorta, was 0.5 cm. in diameter. The intimal surface of the aorta was extensively involved with the most advanced degree of arteriosclerosis for a short distance on either side of the site of aneurysm but elsewhere was not seriously affected.

The accompanying photographs, made by Dr. C. B. Owings, will serve to clarify the description.

The kidneys were somewhat smaller and definitely paler than normal.

The head of the pancreas was slightly indurated, but otherwise the organ appeared normal.

The tip of the left adrenal contained an adenoma about 25 mm. in diameter.

The pathological diagnosis was:

Aneurysm of abdominal aorta with perforation into the intestines.

Arteriosclerosis of the aorta and of the coronary vessels. Chronic myocardial degeneration.

Arteriosclerotic nephrosclerosis.

Chronic passive congestion of spleen and low grade acute splenitis.

Chronic passive congestion of liver and chronic biliary cholangitis.

Adenoma of adrenal.

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SULFATHIAZOLE IN INFECTIONS OF THE URINARY TRACT AND IN GENERAL SEPTICEMIA—REPORT OF 50 CASES.*

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The most striking advance in the field of chemotherapy has been the evolution and tremendous potentialities of sulfanilamide and its derivatives. Many new avenues have been opened for the use of these drugs.

The limitations of sulfanilamide have been realized and it has become necessary to explore the field further to find other synthesized derivatives of this drug which will act where the parent drug has failed, such as in infections from staphylococcus aureus, streptococcus faecalis and bacillus proteus. In answer to this demand, sulfapyridine was introduced and offered potentialities that sulfanilamide did not possess. It was soon found to produce serious side-effects, however, such as nausea and vomiting, dizziness and cyanosis. More recently sulfathiazole was evolved by Fosbinder and Waters¹ and seems to possess definite advantages over the other sulfonamides. So many articles have appeared recently on sulfathiazole that it seems unnecessary to discuss its use in general infections. This paper will, therefore, be limited to a discussion of its use in urinary and certain bloodstream infections. The toxicity, dosage and relative value in comparison with the other sulfamido preparations will be briefly discussed.

When sulfathiazole was synthesized another sulfanilamide derivative called sulfamethylthiazole was also evolved. The latter drug was found to be of value in treating infections of the bloodstream caused by staphylococcus aureus. Several cases were found to be suffering from peripheral neuritis after it had been administered. It was, therefore, quickly withdrawn from clinical investigation.

Extensive animal experimentation, as well as widespread clinical use, indicated that sulfathiazole possessed definite advantages over sulfanilamide and sulfapyridine. Sulfathiazole was rapidly metabolized in the body, readily absorbed, and quickly excreted in the urine. Chemical analyses of the urine after ingestion of the drug showed that a large proportion of it was excreted in twenty-four hours (80 to 90 per cent). Less of the drug was synthesized in the body than sulfapyridine, leaving a larger amount of the drug available for bacteriostasis.

Spink and Hansen² reported 128 cases suffering from pneumonia, staphylococcic sepsis and infections of the urinary tract treated with sulfathiazole. They stated that it showed as little toxicity as sulfanilamide or sulfapyridine, produced less nausea and vomiting and was as valuable as sulfapyridine in treating pneumococcic pneumonia, staphylococci and streptococcus faecalis. Long³ pointed out that the acute toxicity caused by sulfathiazole was definitely less than that resulting from sulfapyridine.

Clinical study showed the action of the drug in the body to be bacteriostatic rather than bactericidal. Sulfathiazole had a sterilizing effect on the urine and in varying concentrations from 50 to 200 mgm.

Pepper⁴ and his associates stated that hematuria was present in twenty-seven of 381 patients taking sulfapyridine. Both drugs may produce urinary calculi by precipitation of their respective crystals, in some instances producing complete blockage of the ureter. Because of the tendency toward intra-tubular precipitation of crystals of sulfathiazole, renal complications may be more serious than those found with sulfapyridine. This complication can usually be obviated by an adequate intake of fluids—2,500-3,000 cc.

*Read by invitation before the Tennessee Valley Post-Graduate Medical Assembly, Knoxville, Tenn., October 10, 1940.

every twenty-four hours. Alyea¹¹ stated that the concentration of the drug in the urine did not depend on the fluid intake. An individual with evidence of renal damage excretes sulfathiazole very poorly, as the damaged kidney does not have the ability to concentrate the drug.

Long³ pointed out that if certain principles are observed the sulfonamide derivatives can be used with greater impunity than has hitherto been considered possible. He analyzed the incidence and type of toxic reactions occurring in a group of hospitalized patients, 297 of whom were treated with sulfapyridine and 291 with sulfathiazole. In patients with pneumonia, less cyanosis was found when sulfathiazole was administered than occurred with sulfapyridine. There was also less nausea, vomiting and dizziness, and little evidence of hepatitis. He concluded that the physician should not hesitate to administer these drugs in adequate amounts when indicated, *provided* the patient could be seen at least once a day. Hill⁵ stated that the larger amount of sulfathiazole found in the urine compared with sulfanilamide and sulfapyridine, indicated that sulfathiazole may be a more valuable antiseptic than either sulfapyridine or sulfanilamide.

In the past, the prognosis has been very poor in blood-stream infections caused by staphylococcal organisms. Kelliher⁶ recently reported a case of septicemia cured with sulfamethylthiazole. Pool and Cook⁷ reported fifty cases of various infections treated with sulfathiazole and sulfamethylthiazole. Sixty-five per cent of the patients were cured. Several patients had infections caused by staphylococcus aureus and streptococcus faecalis. Lindsay⁸ found sulfathiazole very effective in the treatment of various types of systemic infections caused by staphylococci. Ballenger and McDonald⁹ stated that sulfathiazole was the drug of choice in treating staphylococcal and streptococcal faecalis infections. They found no evidence of precipitation of crystals in the kidney or bladder of fifty-nine patients and observed that gonococcal infections resistant to sulfanilamide often responded promptly to sulfathiazole. Average time of cure was twelve days.

When sulfathiazole was placed before the profession for clinical investigation I¹⁰ began using it, and presented the first report on its use in gonorrheal urethritis. During this time, fifty patients with various types of infection of the urinary tract, of which

twenty-three were gonorrheal urethritis, were treated. Sulfathiazole was used in five instances after sulfanilamide and sulfapyridine were ineffective. In four of these cases, the infection promptly resolved. In certain instances the response to sulfathiazole has been dramatic. In eighteen other cases, fourteen responded favorably to sulfathiazole. Local antiseptics (protargol 1/2 per cent) were used concurrently. In three instances, the drug had to be discontinued owing to dermatitis; in two, dizziness, nausea and vomiting was observed, and in the remaining cases it was well tolerated, aside from slight epigastric distress. The average duration of symptoms in the acute infectious group was eleven days. The initial dose in severe infections was 2 grams, with a maintenance dose of 1 gram three times daily.

Owing to its rapid elimination sulfathiazole presents difficulties in maintaining the blood level concentration at an even point. Fortunately it seems unnecessary to do so to attain good results.

Sulfathiazole was used in twenty-eight patients having infection of the upper portion of the urinary tract or in patients with prostatic obstruction. Fifteen had renal infections. In seven, the offending organism was staphylococcus aureus; in three haemolytic streptococcus; and in five, B. coli. Twelve responded favorably, the urine becoming sterile in eleven instances. The three remaining patients had sufficient obstruction to produce stasis of urine, thus lowering the effectiveness of the drug. The remaining thirteen had prostatic enlargement with mixed infections. The offending organism was found to be Escherichia coli, the staphylococcal group or the streptococci. The presence of prostatic enlargement made it impossible to sterilize the urinary tract in ten instances. After the prostate was removed, however, sulfathiazole was valuable in clearing up the post-operative infection. The effectiveness of sulfathiazole depends upon the maintenance of adequate dosage plus free drainage of urine. Unless this is done, the response to chemotherapy will be disappointing. Alyea¹¹ found that moderately sized doses (six tablets daily) were as effective as the larger doses, and the toxicity is appreciably decreased.

In view of the small number of cases of blood-stream infections caused by staphylococcus aureus in which recovery was found, two cases will be briefly discussed.

Case 1: H. B., a man aged seventy, entered the hospital February 4, 1940. He was in a comatose condition which had been present for twenty-four hours. The blood culture yielded staphylococcus aureus. After consultation an initial dose of 4 grams of sulfathiazole was given, followed by 1 gram every six hours. This medication was continued for four days. The patient's temperature had been running a septic curve prior to the administration of sulfathiazole, but became normal after three days. A culture made five days later yielded negative results, as did one three days subsequently. An intravenous pyelogram showed calculous pyelonephrosis of the right kidney. The left kidney was normal. A nephrectomy was done under spinal anesthesia and a functionless kidney removed. Following this procedure the patient quickly recovered and was discharged cured two weeks later. The blood level of sulfathiazole was checked on alternate days during administration of the drug and averaged 5 mgm. per 100 cc. of blood. The patient showed no evidence of toxicity until the end of the fourth day when nausea appeared and food was refused. The drug was then discontinued and the nausea disappeared.

Case 2: This patient had a non-haemolytic streptococcus bloodstream infection in which sulfathiazole was effectively used. Mr. C. S. W. was admitted to the hospital March, 1940, complaining of severe pain over the kidney area, nausea and vomiting. The attack was initiated by a chill, followed by a sharp rise in temperature. The pain in the kidney area became very acute. The patient had a similar attack four weeks before and was confined to his bed for two weeks. A blood and urine culture made by Dr. Lindsay yielded non-haemolytic streptococci. The patient was placed on sulfathiazole and given an initial dose of 4 grams followed by 1 gram every six hours. Within twenty-four hours, marked remission of the fever occurred and on the second day his temperature became normal. The drug was discontinued after three days. An intravenous pyelogram made subsequent to this attack showed evidence of a long standing atrophic pyelonephritis.

DOSAGE

Because of rapid elimination of sulfathiazole it should be given at frequent intervals, insuring a more constant blood level concentration. In severe fulminating infections an initial dose of 2 to 4 grams may be given. One gram of the drug is then given

three times daily. Carey¹² states that the initial oral dose of sulfapyridine and sulfathiazole is $\frac{1}{4}$ grain per pound (maximum 45 grains). A maintenance dose of 1 to $1\frac{1}{2}$ grains per pound may be given for twenty-four hours in four to six doses. For intravenous administration, sodium sulfathiazole is given in a 5 per cent solution in sterile distilled water. The initial dose is 1.25 cc. per pound, maximum 100 cc. This amount may be repeated at twelve-hour intervals. For rectal administration one may use a 5 per cent solution of the sodium salt in distilled water. Two to 3 cc. per pound is given each twenty-four hours—divided in four to six doses.

Prentiss and Flocks¹³ found definite liver injury in 49.5 per cent of 111 patients taking sulfanilamide; only 9 per cent, however, showed jaundice. The remainder had positive van den Bergh reaction.

TOXICITY

It is generally agreed that sulfathiazole exhibits no more toxicity than do the other sulfamido preparations. Less disturbance of the gastrointestinal tract and less cyanosis is found. It must be remembered, however, that sulfapyridine and sulfathiazole are capable of producing severe damage to the liver, kidneys, spleen and hemopoietic system. These drugs should, therefore, be given in smaller amounts than earlier reports suggested. I know of two instances in which the patient died as the result of the administration of the sulfamido preparations, degeneration of the kidney and liver being found.

Certain principles should always be observed in their administration. These are: an adequate intake of fluids (3,000-4,000 daily), small dosage (30 to 45 gr.), daily observation for evidence of toxicity, frequent examination of the blood and urine, avoidance of sunlight, and hospitalization of the patient if possible. The drug should be withdrawn if fever, dermatitis, hematuria, dizziness, severe nausea, vomiting, cyanosis, injection of the sclera or conjunctiva is noted. Generally speaking, the prompt withdrawal of the drug will cause these unfavorable side-effects to disappear. The simultaneous administration of an alkali is unnecessary with sulfathiazole.

CONCLUSIONS

One must always consider the possibility of damage to the kidneys, liver and hemopoietic system.

Before prescribing the sulfamido preparations, and

until more is learned of their potential power to produce permanent injury, they should be used with great care in mild infections, or in patients with partial impairment of the liver.

The amount of fluid must be adequate (3,000 cc. daily) but has little effect on the blood level concentration of the drug. Smaller doses are suggested, thereby reducing the possibility of toxicity, yet at the same time as effectively controlling the infection.

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LITHOPEDION OF SEVEN YEARS DURATION FOLLOWED BY HYDATIFORM MOLE—

Case Report.*

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The study and observation of the changes in the life history of a lithopedion are very interesting because of the infrequency of its occurrence and on account of the difficulty in diagnosis. In fact, very few cases have been found in literature in which a correct diagnosis was made before the operation.

The study of this case was made soon after all movement of the fetus ceased. There was no disturbance following the death of the child so far as the mother was concerned.

The soft parts of the fetus were probably absorbed and the skeleton of the child slowly moved from its original position downward toward the symphysis. How long the integrity of the fetal body was preserved, we do not know.

Our observation of the evolution of this lithopedion from its beginning to 1938 has been followed by means of X-ray. The gradual change from the size of practically a full term child to that of a large grapefruit is demonstrated. In the literature on lithopedion no one has yet been able to tell at

what stage of pregnancy the formation of the lithopedion may take place.

On July 12, 1933, Mrs. A.D., white, female, aged thirty-eight, came to the office, complaining of nausea, occasional vomiting, and amenorrhea of three months duration. She also complained of low back pain, dull pain in the right lower quadrant, and a moderate leukorrhea.

Past History. The patient did not recall any previous illness of significance. She denied ever having had any of the usual childhood diseases. She was married at the age of nineteen and had one child, aged fifteen, and one miscarriage three years later. She never had any gastro-intestinal disturbances.

Her social history was negative. Periods began at the age of fourteen and were regular at twenty-eight day intervals, lasting four days with moderate bleeding. She had no dysmenorrhea, metrorrhagia or menorrhagia of any degree. About three years previously, she felt rather persistent low back pain accompanied by profuse leukorrhea between her periods.

She consulted a physician at that time who ad-

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*Presented before the East Flatbush Medical Society.

vised operative intervention with the hope of relieving the symptoms. Six months later she was operated for laceration of cervix and removal of small fibroid of anterior cervical lip. Her recovery was uneventful and the symptoms disappeared.

Physical Examination. Patient was well developed; a well nourished female. Her eyes, ears, nose and throat were essentially negative, except that the tonsils were definitely the site of a chronic inflammatory process. Her heart and lungs were negative. Abdomen was moderately protuberant and no palpable masses could be felt, but there was a sensation of definite discomfort, approaching pain on deep palpation of the lower right quadrant.

There was no rebound phenomenon found and there was no dullness in the flanks. Extremities were negative.

Gynecologic examination revealed a relaxed pelvic floor with moderate amount of white mucoid discharge. Uterus was perceptibly enlarged to about two to three months pregnancy and the cervix was soft. Left adnexa was negative. The right ovary was definitely enlarged and tender. There seemed to be a small tender mass in the right fornix. There was no contact sensitivity or pain on movement of



Fig. 2.—X-ray taken 1935. Fetus in the transverse position, (slightly lower).



Fig. 1.—X-ray taken 1934. Fetus in the transverse position.

the cervix. The possibility of an ectopic pregnancy was considered but was dismissed as unlikely.

A tentative diagnosis of uterine pregnancy was made which was confirmed by a positive A.Z. test.

Subsequent course consisted of periodic prenatal visits by the patient. About two months after the first visit she claimed she felt fetal movement. Fetal heart could be heard. Patient had no complaints, gained moderately in weight and there was a definite progressive abdominal enlargement.

Laboratory findings during the periodic visits: Blood and urine were normal and Wassermann was negative.

Suddenly, on February 24, 1934, the patient arose one morning to find moderate vaginal bleeding. Previous to this apparently her pregnancy had been proceeding normally and she had been able to do her regular housework.

Later in the day, while attending to her housework, she was seized with acute abdominal pain and fainted. Upon recovering consciousness, she crawled to the telephone to call the doctor.

Upon our arrival, we found the patient in mild shock, pale and extremely restless. There was

marked abdominal distention and continuous vomiting. All symptoms pointed to intra-abdominal hemorrhage. Temperature 101 F.; pulse 130; respiration 24. It was thought best not to make too thorough an examination at this time, for fear of producing further hemorrhage and with the thought in mind that subsequent surgical intervention might be necessary. The patient refused to be hospitalized and treatments were instituted at once by giving intravenous glucose 5 per cent with saline and one-fourth grain of morphine. Absolute rest and quiet were ordered under the supervision of day and night nurses for further development.

A blood examination at that time showed a red blood cell count of 2,700,000, hemoglobin of fifty-five, white count 17,000, polys 80. Urine was negative except for many red cells as the result of vaginal bleeding.

After a five weeks stay in bed the patient's condition had greatly improved. Recovery followed after two direct blood transfusions of 300 cc. each at four day intervals to compensate for the intra-abdominal hemorrhage which had occurred. Fetal motion disappeared and fetal heart sound could not be heard.



Fig. 3.—X-ray taken 1937. Fetus moved from its original position, further into the pelvis.



Fig. 4.—X-ray taken 1938. Skeleton of the fetus down in the pelvis.

Abdomen was moderately tender but not distended. Uterus was felt about two inches above the symphysis. This was considered significant at this stage of pregnancy.

X-ray taken the beginning of April, 1934, showed a well developed fetus in the transverse position.

A marked improvement of the patient's condition occurred after this period and any subsequent examinations and studies were refused by the patient.

After great difficulty and persistent persuasion, we finally succeeded in having another X-ray taken in 1935. There was no great material change in the picture. The patient's condition was excellent, periods became regular and there were no gastrointestinal disturbances. A rather hard, fixed mass, the size of about a six months pregnancy was felt in the lower right quadrant. The uterus was of normal size.

In 1936, the condition of the patient was very good. X-rays revealed the fetus had moved downward from its original position into the pelvis. The mass in the right lower quadrant had diminished a great deal in size. The uterus was of normal size.

Periods were regular. No doubt at this period the soft parts of the fetus were absorbed.

On March 15, 1938, we saw, in consultation, the same patient who was now removed to the hospital. her history revealed a five months pregnancy with spotting at frequent intervals of dark unclotted blood. Without warning, upon arising from bed, she noticed a considerable discharge coming from the vagina, accompanied by abdominal and lumbar pain. She never felt fetal motion and the fetal heart sound could not be heard. An unusual feature was the extreme apprehension of the patient and, while at this time there was no perceptible evidence of anemia or shock, she gave the impression of being very ill. The abdomen was prominent and resembled a full term pregnancy in size.

While we made the examination, the patient complained of severe abdominal cramps and began to bleed profusely. The bleeding subsided temporarily

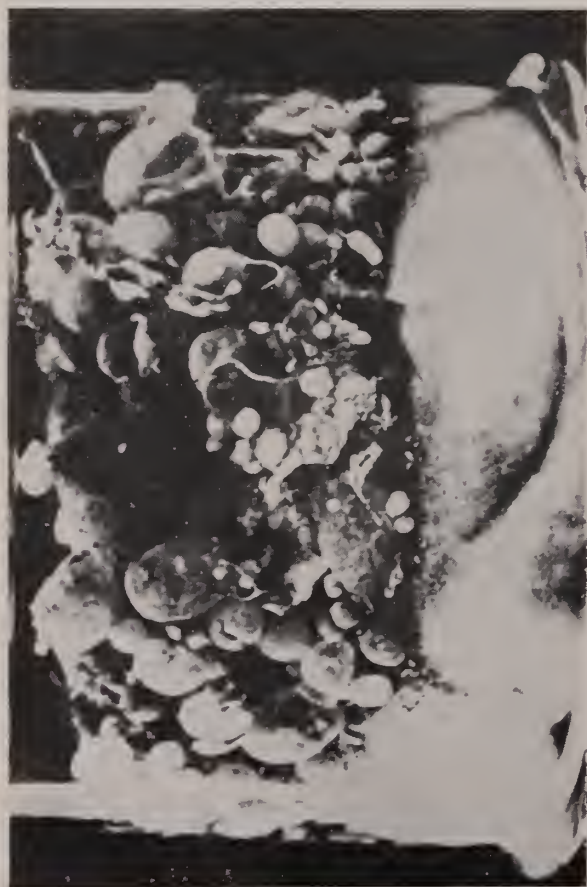


Fig. 5.—Macroscopic specimen of hydatiform mole.

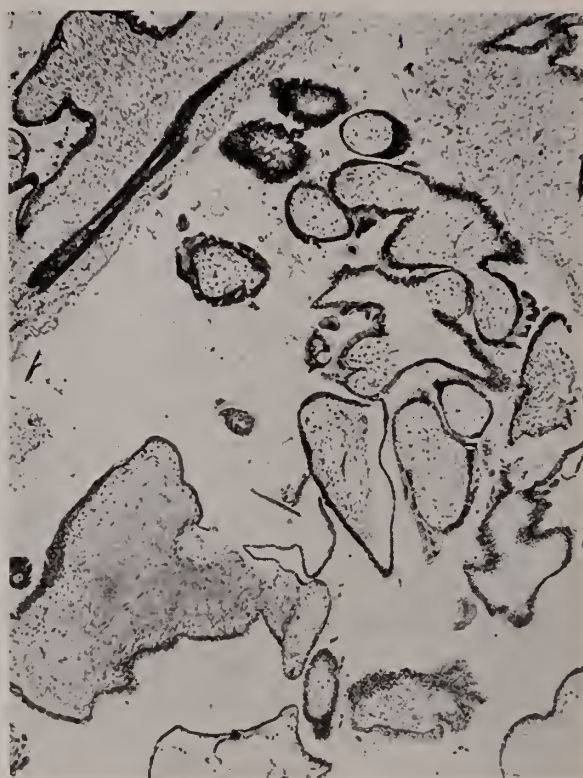


Fig. 6.—Microscopic slide of hydatiform mole.

on packing the vagina and on administering one-fourth grain of morphine. Eight hours later the bleeding reappeared and, upon removing the packing, there was a spontaneous expulsion of a large mass from the uterus, consisting of grape-like masses of transparent cysts of various sizes which contained a clear viscid fluid. This mass presented the characteristic appearance of an hydatiform mole. The uterine cavity was cleaned out with a sponge. No curettage was done. The patient made an uneventful recovery and left the hospital in good condition. A quantitative test for gonadotropic substance at that time was negative. There was no alteration in the position or consistency of the lithopedion after the X-ray examination.

Six months after the expulsion of the mole, monthly quantitative determination of gonadotropic substance in the urine has been persistently negative.

It was impossible to continue to study this case since all efforts to locate the patient have failed.

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SULFANILAMIDE THERAPY IN MADURA FOOT.

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Madura foot, or mycetoma, is a chronic fungus infection which attacks the feet. Although it is found chiefly in India and the tropical regions of our Western hemisphere, it has been reported sporadically in all parts of the world. In 1932, Brindley and Howell reported twenty-eight cases of madura foot in the United States (*Southern Medical Journal*, Vol. XXV, No. 10, p. 1022).

Curiously, mycetoma usually confines itself to the feet, rarely attacking any other structure. As one would expect of a fungus growth, its long chronic course runs from ten to twenty years. All this time

the patient often uses the deformed foot for walking. Unlike other infections, there is complete absence of systemic effect. The condition has never been known to recover spontaneously, surgical amputation being the only known cure.

The fungus causing mycetoma is closely related to the actinomyces and is known as actinomyces madura.

CASE REPORT

Fifteen years ago a colored school teacher, now fifty-five years old, used a pair of shoes that had been worn by a friend in Mississippi. (This is the



Draining sinuses on plantar surface of foot February, 1937.



Showing irregular pigmentation February, 1937.

it burrows through the structures of the foot, damaging muscle and bone alike. It is recognized clinically by a greatly enlarged foot, honey-combed with communicating discharging sinuses. The discharge often contains granules resembling fish-roe. The skin appears mottled from irregular pigmentation and cicatrization. In spite of moderate local pain,

only suggested source of infection.) About two weeks later she developed a severe aching pain in the left great toe which was constant day and night. The dorsal part of the toe began to swell and soon broke down and began to drain. Ulcers appeared around the ankle, and draining sinuses developed on the side and plantar surface of the foot. She states that the

drainage from these sinuses sometimes contained "little yellow balls". During the next seven years this colored woman visited numerous doctors, clinics, and hospitals, and, in spite of a negative Wassermann, was often treated for syphilis. In August, 1932, one toe, which had almost sloughed off, was amputated. A few months later when the disease had continued to progress, the left leg was amputated just below the knee. Unfortunately this specimen was not preserved, but was reported grossly to show "arteritis." Tragically for the patient, shortly after the amputation, the disease appeared in the other foot and ran the same course as in the original infection. In 1937, she was seen by Dr. George Lawson, of Roanoke, who made a diagnosis of Madura foot. However, in our laboratory at the Jefferson Hospital, Dr. K. T. Redfield was not able to isolate the organism on Sebourea's medium. On direct smear, the morphology of the organism resembled *actinomyces madura*.

Through the courtesy of Dr. Lawson, I was able to try various forms of local treatment, all of which seemed to aggravate the condition. The patient had repeatedly refused surgical removal of the remaining foot. At this time the foot was enlarged and markedly deformed. It had a mottled appearance from pigmented areas mingled with scarred areas extending eight to ten inches above the ankle. There were small draining sinuses on the sides and plantar surface of the foot. Granules were not noticed in the discharge at the time. They could, however, be obtained by irrigating a sinus with normal saline. There were large superficial ulcers on both sides of

the foot, and X-rays showed marked rarefaction of the bony structure.

After a year of unsuccessful local treatment, the foot was definitely worse. At this time there was a report by Miller and Fell of two cases of actinomycosis cured by sulfanilamide (Sulfanilamide Therapy in Actinomycosis, *J.A.M.A.*, Vol. 112, February 25, 1939, p. 731). One of the cases they had treated, and the other was a summary of a case reported by Oliver Walker, of Liverpool (Sulfanilamide in the Treatment of Actinomycosis, *Lancet*, p. 1219, May 28, 1938). Since the causative organisms of mycetoma and actinomycosis are quite similar, this patient was started on eighty grains of sulfanilamide daily for four days, then sixty grains daily for four months. This she tolerated remarkably well. After the first four days the discharge had subsided and the pain had ceased. By the end of the third month healing was complete except for deformity. She was able to walk on the foot by wrapping it in several thicknesses of cloth.

Twice during the past eight months a small ulcer appeared on the foot which cleared up promptly with resumption of sulfanilamide. Apparently the lesions were reinfections, which is quite likely from the unsanitary little shanty where she lives. No other treatment was used with the sulfanilamide.

The significant fact is that a case of chronic draining sinuses of the feet, of fifteen years duration without a remission, has now been completely healed for eight months by sulfanilamide therapy. This case has had the clinical course, and physical characteristics of *maduromycosis*.

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HABIT.*

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It does not require much reflection for us to realize that we are, to a great extent, the slaves of habit, and the realization of this should give us more concern as to their formation. The word "habit" is derived from the Latin word "*habitus-habere*" meaning "to have" and is medically defined

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†From the Staff of Westbrook Sanatorium, Richmond, Va.

as "a practice or custom established by frequent repetition of the same act". From a physiological point-of-view it is a regular or systematized interaction between mind and body which results in a frequent repetition of a set of nervous impulses and muscular responses. Still another practical definition of habit is that it is a customary way of behaving, either natural, or, if unnatural, the result of frequent repetition. The word habit carries with it no

reference to good or bad. However, in this discussion reference is made to good and bad habits in the generally accepted sense.

From a generic and from a mechanistic viewpoint we cannot consider habits inseparable from reflexes and instincts. If we adhere closely to the behaviorist school of psychology or the physiologic psychologists, such as Watson, Morgan, Pavloff and others, then the conditioned and chained reflexes control and explain human behavior on purely a mechanical basis. Without doubt, on a developmental basis, there is a great deal of truth in the mechanistic teachings; but the cerebral cortex as a highly sensitized conditioner of our behavior defies logical explanation. It is a well-established fact, however, that primitive responses to physical and chemical stimuli are reflexive and we do not associate habit with such responses until the nervous system becomes more integrated, and then these definite reflex response patterns are called habits.

Without going into the details of the development of reflex activity, it can be said that as the nervous system develops, reflexes gradually become more complex, in that they become compounded, co-ordinated, conditioned, chained and inhibited. Sherrington states that the unit integration is the reflex; and Pavloff considers all involuntary activities as hereditary and describes them as unconditioned reflexes. Conditioned reflexes employ the same structure as the unconditioned reflexes but are dependent on the integrity of the cerebral centers. Thus, the cortex merely acts as a conditioner of already existing, simple, compounded, inhibitory, coordinated and chained reflexes, and directs energy in association with hereditary, constitutional and environmental factors toward purposive behavior. Thus behavior is, to a certain extent, conditioned by heredity and environment, but, on the other hand, it can be determined by training and experience through the establishment of habit-patterns by repeated reflex responses.

Closely allied to habits are "instincts" which are defined as fixed constitutional habits, which are not subject to conditioning. Instincts are inherited tendencies to action; instincts may be thought of as accumulations or crystalizations within the germ cell of positive forces through ancestral acquisitions. A simple conception would be, perhaps, to consider reflexes as constitutional; instincts as inherited, and habits as acquired. It is impossible to

determine where reflex action merges into instinctive behavior. Thus we see that a consideration of habit involves reflexes and instincts and the discussion of instincts may become highly controversial. My purpose is to freshen our minds regarding habits, and to emphasize their importance, and to differentiate the good and the bad. Repetition is a basic factor in all habit-action.

The word habit is associated with or closely allied to such terms as second nature, addiction, commonplace, behavior, customs, traditions, compulsions, obsessions, inveterate, instinctive, every-day, stereotype, routine, permanent, ingrained, fixed, pattern, obstinate, prejudiced, old school, conventional, familiar, and a host of others, so that we can readily see that habits are developed by groups as by individuals. If there can be any line of distinction drawn between mental and physical habits, it would be readily seen that we need concern ourselves little about physical habits, but that we should realize that most of the difficulty is centered around faulty mental habits.

Infancy is, of course, the proper time for the development of wholesome mental habits. The longer the infancy of any animal the greater the opportunity for the formation of habits. The older the individual the more difficult it is to form a new habit or to reform an old habit. When one responds to the impulse to perform an act, the next time the same impulse is experienced the body responds a little quicker, and these paths of motor discharge pave the foundation of a new habit. Such gross habits as drug and alcoholic addiction generally have their origin in early life. The individual as a child probably was not taught to develop the habit of facing reality. The desire to escape unpleasant reality is perhaps inherent in all of us, and there are many rational and irrational mechanisms for avoiding it. While some of us rationalize normally, others do so abnormally; while some escape reality by establishing good habits, others do so by developing bad habits. Smoking or chewing tobacco, taking a drink of whiskey for the first time, is usually distasteful to the individual. We assiduously cultivate the habit because of tradition and custom; indeed, seldom is the initial indulgence in these agents conducive to establishing the habit, for often the physiologic disturbance that they cause would logically bar them completely from further use. It is such habits as these that are determined

or perhaps conditioned by society. Drug addiction, such as morphine, is, on the other hand, generally speaking, anti-social, and the habit is established because of well-known psychological and physiological factors. It is by chance that many bad habits are established and when once that habit becomes fixed the individual may control it or the habit controls the individual. Once in the control of a bad habit, it is logical that that person inevitably has difficulty or becomes pathological.

In training children we pay a great deal of attention to their physical habits and feel quite proud that we have established good habits as to their intake of food, the emptying of the bladder and bowels, sleeping, etc. However, hypochondriasis is frequently traced to over-solicitousness of the parents in directing the attention of the child to the alimentary tract. In many ways we are handicapped or helped by habits of attention.

It is difficult for many of us to concentrate, to focus our attention or direct our energies toward an objective because we never were taught or encouraged to establish the proper habits or the art of thinking. In communities which engage in frequent emotional debauches at funerals and protracted religious meetings, etc., there is a likelihood of an otherwise normal person becoming emotionally unstable. Certainly emotions can be conditioned to a great degree.

Mental habits pertaining to cerebration, such as reason, thinking, judgment, etc., can be encouraged during the habit-forming period of our lives, but certain limitations as to an individual's capacity have to be recognized and conditioned accordingly, for one must remember that every person's capacity is influenced by heredity and environment, but nevertheless can be regulated and modified by training, experience and by the establishment of habit patterns. We might mention two pathological aspects of habits, compulsion and obsession, one of acting and the other of thinking. The morbid condition often develops innocently enough, such as a person touching every lamp post he passes or picking up pins or washing hands; when he is prompted by an impulse which he cannot justify or control, then the action or idea ceases to be a habit and becomes a compulsion or obsession. In many ways compulsion and obsession are similar to deeply ingrained habits.

Regardless of theoretical speculation as to the extent of habits in our behavior and mental processes,

it seems obvious that both are influenced to a great extent by them. The difficult job is to disrupt bad and establish good habits. Some of the apparent good results we obtain in institutional practice are superficial because only indulgence is eliminated and routine habits of eating, sleeping and eliminating are re-established. Sad to relate is the fact that this type of apparent improvement physically little more than scratches the surface in so far as the mental habits are concerned. One must reckon back over many years and the process of correction involves re-education.

Habit is the basis of education, some one has said, and it is necessary for us to be trained and make automatic and habitual as early as possible as many useful actions as possible. The more of the details of everyday life we can delegate to the custody of automatism, the more the mental processes will be free for their proper work. The consideration of the establishment of habits takes us back to early training, guidance, teaching, etc., and cannot be discussed at this time. However, there are a few factors regarding the acquisition of new habits and the breaking away from old and bad habits that might be worthwhile reviewing. Resolutions and initial action to re-inforce the right motive is the first effort toward establishing or reforming a habit. Every time we act in a positive way to break a bad habit we fortify ourselves against recurrence of it. Continuity of training is the best way of making the nervous system act right. Therefore, there can be no exceptions in reforming habits of living; exceptions or lapses are like dropping a ball of twine which one is carefully wrapping up. The question of tapering off in such habits as drinking comes under this consideration. A desire will soon die if it is never fed. In the words of Dr. Bosnsen: "He who every day makes a fresh resolve is like one who, arriving at the edge of a ditch he is to leap, forever stops and returns for a fresh start. Without unbroken advance there is no such thing as accumulation of positive forces." It is not the wish, the desire or resolution regarding a habit that brings about a change but the active motor response, or the putting our words and thoughts into action by power of will and determination to act.

The proverbial road to Hell is said to be paved with good intentions or resolutions. A resolution that is allowed to dissolve because of lack of action, inhibits

its future formation. Attention wanders if no effort is made to focus it. Emotions become distorted if not expressed properly, either directly or indirectly. Daily exercise in concentrated attention, energetic volition and self-denial in unnecessary things insures us in the best possible way the controlling of our habits. Such well-known characters in literature as Rip Van Winkle, who "Didn't count this time"; Micawber, who waited for something to "Turn up", and the Village Blacksmith who diligently applied his energies and many others, illustrate how habits of living mould character and personality.

Perhaps it is true that there are many who in spite of excellent training succumb to bad habits of living, and then there are others who overcome many handicaps of early training—yet when proper habits integrate and improper ones disintegrate, it may be assumed that a pathological habit could be modified, even if the individual is poorly endowed, by guidance and reasonable evaluation of the hereditary, constitutional and environmental factors, so that a modified, but reasonably adequate adjustment level could be attained. The social factor as to habits enters here because it is unusual for society to accept

an individual adjustment level.

Behavior is conditioned by personal integrity, which in turn is subject to development or disorganization by early established habits.

Life is a complicated process and the living of it even more so, yet, on the other hand, we might well ask ourselves why? So-called civilization, a product of man's development, also has become complicated and confusing. The average person is dumb-founded by the complexities of our government, scientific and engineering projects, yet on analysis we find that these complex creations of men are based on principles which are relatively easy to grasp. Might not this also be true of life and the living of it—that many things become complex, conflicting and confusing for us because we lose sight of the simple principles upon which they are based, and in our efforts to solve the complex, overlook a simple solution?

The nerve fibers have many tracts and the cells many recesses, perhaps enough to store from heredity, to acquire through training and the establishment of habit patterns, and from storage and acquisition to create.

FOUR PROBLEMS CONCERNING ADENOMATOUS GOITER.*

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The reason for bringing this subject to our attention again is that there is a great tendency to leave these goiters alone until late in life, which is a bad time for surgery.

There are four problems in adenomatous goiter which make it more serious than any other type of goiter, particularly when operation is put off until a late date, and all these causes could be avoided if these people were taken care of early, namely:

1. Adenomatous goiter is the only type of goiter, so far as we know, that ever becomes malignant.

2. It is the only type of goiter we ever have to deal with substernally which produces pressure on the deep vessels and other complications such as dyspnea, etc., and which frequently on removal is followed by a very serious complication, collapse of the trachea, which, unless tracheotomy is done immediately, will be followed by the death of the patient.

3. It is the only type of goiter, practically speaking, where the recurrent laryngeal nerve is injured on removal. It is true that it can be injured in removing exophthalmic goiter, but the danger of injury is not nearly so likely as it is in the adenomatous type, because, when this type of goiter is left, the goiter grows, the nerve is raised up along with the growth of the goiter and the anatomical relation to the nerve has been distorted. This is a very serious complication. This danger is involved chiefly when the gland is raised up, and the nerve, being right on the gland, is easily clamped without ever knowing it. This is the reason why it is far better to do these goiters under local. Then you know instantly when the recurrent laryngeal nerve is injured.

4. The fourth reason which makes these goiters more complicated is that the majority of them give very little trouble in regard to hyperthyroidism until around middle age, or at the menopause, and at this stage the gland has probably grown to be very good

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Washington, N. C., December 3-5, 1940.

sized. The patient is certainly not a good risk at this age because of general debility, age and cardiovascular complications which arise about this time. Most of these reasons mentioned which make the operative procedure of adenomatous goiter more difficult could be avoided if the goiter were taken care of early—before it became so large.

I thought these complications would be of more interest to us than anything else because they are certainly the reasons why this is the most serious type, and there is no question but that the mortality rate following operation for adenomatous goiter is due to some of these causes. Surgically speaking, adenomatous goiter is practically the only type in which there is any mortality rate from operative procedure. Mortality rate is usually due to age and complications which have arisen and could be lowered if these cases had been operated before they got to this stage.

I would like to digress here just a moment. Adenomatous goiter is just as common in this part of the country as it is anywhere else. It is usually found in women bearing children, although, of course, it does occur in women who have not borne children. The history of this type of goiter always dates back

to the beginning of menstruation when a small adenoma developed. The late H. S. Plummer who did so much work in goiter, particularly adenomatous goiter, has frequently mentioned this particular fact about these patients' goiters developing around menopause, bringing out the point that no doubt this type is chiefly due to endocrine disturbance, as all these goiters flare up more around menopause when other changes in endocrinology have taken place. He stressed this point particularly and also stressed the fact that the iodine situation in these goiters is not nearly so important as endocrinology. The basic point is entirely different from exophthalmic goiter. That is why adenomatous goiter is about as frequent in one community as in another and not definitely associated with any one place in regard to iodine. I do not want to be misunderstood. There may be some definite association with the iodine situation but certainly not as much as concerns exophthalmic goiter.

I hope, if this discussion does not bring out but one thing, it will remind us that adenomatous goiter is certainly a frequent type of condition and that it is the most serious type of goiter and practically the only type with any mortality rate of any importance. If we can only put over this point, I think we have accomplished something.

THE PEDIATRICIAN'S ROLE IN MENTAL HYGIENE.*

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The idea that the pediatrician has an important role to play in mental hygiene is of recent origin. The pediatrician trained twenty to twenty-five years ago devoted most of his time to learning the diseases of childhood and the various modifications of milk and sugars used in infant feeding. Preventive measures were not stressed to near the extent they are today.¹ With the increasing knowledge of vitamins and the development of toxoids, vaccines, etc., the concept of preventive pediatrics has grown steadily. Prevention of disease has become a large part of the pediatrician's work. The pediatrician is tending more and more to become the director of growth and development of the child. Knowledge acquired

twenty-five years ago still has its value in practice, but actually is only the foundation of modern pediatrics. Through the application of new methods and discoveries the efficiency of the pediatrician has grown and his services are becoming yearly more valuable to his patients. The next logical step, which bids fair to accelerate this trend, is the assumption by the pediatrician of the role of mental hygienist.

In 1935 the National Committee for Mental Hygiene sponsored a conference of pediatricians and psychiatrists to discuss psychiatric education. The theme of this conference was the training of the pediatrician and general practitioner to deal with the child as a human being and not as just a case of some disease. The inspiration for this conference apparently came from the recognition that most personality difficulties and many mental illnesses have

*This paper was originally read before the Mental Hygiene Section of the Virginia Conference of Social Work, April, 1940. After a few changes it was read before the Richmond Academy of Medicine, October, 1940.

their origin in early life, that prevention or early correction can only be accomplished at that time, and that the pediatrician and general practitioner who are consulted first must have the psychiatric point of view, if they are to meet these cases adequately. The proceedings of this conference² merit careful study.

The nutrition of the psyche is just as important as the nutrition of the soma, and the foundation for both must be built correctly if the final product is to be good. Furthermore, the psyche and the soma are so inextricably bound together that what affects one is bound to affect the other. Expert treatment to one-half of the child and amateur treatment to the other half is too true a description of present day pediatrics. to be acceptable to our egos. Refusal to acknowledge this picture, however, simply means that the condition will continue. When, or if, the pediatrician can direct the feeding of the psyche as well as he can that of the soma, he should have more peace of mind, provided financial worries haven't nullified the good effect of his added accomplishment. This may sound peculiar but actually is a practical statement of one of the difficulties to this type of practice. It takes time to sit and listen to a parent tell the story of the problem that is causing her so much concern, and more time to show her that a change of tactics is desirable. It would probably take even more time to convince her that an extra fee was necessary. The temptation is great to cut short the conversation by writing a prescription or by giving the parent some rule of thumb advice. The prescription might be acceptable for the moment, and undoubtedly would be the safest way to dismiss the patient if the physician weren't capable or willing to give advice based on a clear understanding of the factors involved.

Unless, or until, there is a marked change in the practice of pediatrics and the methods of remuneration to the practitioners, pediatricians will have to practice mental hygiene without too much lost motion. Elaborate studies as practiced by the child guidance clinics, which include medical examination, psychological studies, social work investigations and, finally, sessions with the psychiatrist, are probably forever beyond the scope of private pediatric practice. The analogy is close between minor surgery and mental hygiene and major surgery and psychiatry. The pediatrician can handle adequately a few minor surgical procedures but he must be able to recognize and

refer to a surgeon any surgical condition that is beyond his capacity. It is just as important for him to differentiate between the beginning and advanced cases of personality difficulties that come his way. Sound clinical judgment in either field comes only from a properly trained intelligence, and good judgment is just as important in one field as the other.

The pediatrician with the mental hygiene point of view can see opportunities for valuable service to his patients in nearly every consultation. In some cases he will note living conditions or attitudes that might be corrected by a tactful suggestion. In other cases he will be consulted for some symptom that may have arisen from emotional tension and can only be treated adequately by eradicating the cause. A much larger per cent of his cases will present the combination of physical disease and mental attitudes as etiological factors. Even in the treatment of purely physical conditions an understanding of child psychology can be used to advantage.

The child is born with certain hereditary traits, structure, gland patterns, emotions, instincts and limits of intellectual capacity with which to start life. Truly hereditary factors can only be influenced by selective breeding, and are obviously beyond the control of the medical profession today. Endocrine disturbances, diseases, the nutrition and life of the pregnant woman may all be treated by her physician with advantage, both to the mother and to the child. Proper attention to these matters insures the baby against avoidable handicaps, and gives him a better start in life.

The stages of the child's physical development are well known and need not be mentioned here. Psychologists and psychiatrists have revealed by their studies that there are just as definite stages of mental and emotional or psychosexual development. These stages are not abrupt transitions normally but merge, the earlier stage gradually giving place to the next. Attempts either to accelerate or retard these stages can only lead to trouble. Severe or repeated psychic traumata, e.g., fears, repressions, deprivations, etc., occurring in any of these stages, tend to bind the personality to that stage of development and lead to a psychosexual retardation that may continue through life.

The child starts off on his extra-uterine career with certain automatic and reflex activities capable of immediate action. In addition, he has the funda-

mental and persistent instincts of self preservation and reproduction, and the basic emotions of joy, fear and anger. The field of consciousness is like a field covered with snow, as yet untracked. Each new stimulus, however, that enters this field leaves its mark or pathway. This passage calls for some response from the instincts or emotions, and some voluntary or automatic activity. The degree of activity will depend on the intensity of the initial stimulus, the sensitivity of the receptive apparatus, and the boosting effect of the emotions involved. Subsequent stimuli of similar types tend to follow the same pathways, which thus become easier to tread as they are worn deeper and smoother through use. Other stimuli fortuitously entering the field of consciousness at near the same time are quite likely to be associated with the stimulus that causes the greater emotional involvement. In this way they may acquire an emotional coloring that is undeserved but none the less real. The behavior that follows is understandable only if this connection is known or sensed. To the trained eye, unclouded by emotion, the behavior of the young child is fairly transparent; abnormal behavior of the older child or adult, however, often can be explained only by the expert after intelligent and time consuming study.

The instincts which demand gratification when they are aroused, and the emotions which color and direct the response, are untrammelled in early infancy. The behavior that results is, however, acceptable to others for only a short time. Soon the curbing influence of the environment is perceived by the infant and the process of learning social adaptation has begun. This process is facilitated by bodily comfort and is rendered difficult by factors such as metabolic disturbances, food allergies, infections or other physical ailments that cause repeated discomfort to the child, and distress and worry to the family. The pediatrician who relieves these ailments has practiced mental hygiene whether he realizes it or not. Moods are contagious, and neither the parent nor the child is immune. Fear and anger are essential for self preservation because they produce physiological changes that quickly prepare the body to run or fight. When neither is possible or necessary, the pent up energy produced by the emotional upset racks the body until it is spent. Both the child and the parents suffer in consequence. On the other hand, joy leads to comfort and happiness, and is

physiologically constructive. The atmosphere surrounding the baby, therefore, means a lot to his well being. Words mean little to the small child, but emotions and actions mean a great deal, and are quickly reflected in his behavior. The unselfish love of the parents, especially of the mother, is highly prized by the infant, and the slightest suggestion of its loss because of his behavior exerts a strong corrective action. The selfishness or hostility of the parent, disguised as over-solicitude, may be sensed by the infant and produce uneasiness or anger. The undisguised hostility revealed by stern or rough methods of correction and insistence on strict obedience to arbitrary commands either breaks the child's spirit or calls forth his fighting qualities. Unhappiness and trouble are bound to follow and the effects may persist through life. If the child chooses to fight there are no Marquis of Queensbury rules to govern the contest and no limit to the number of rounds. The original fight is soon followed by many more and the chip stays on the shoulder except when it is being knocked off. Habit training and eating are generally the bones of contention, and not infrequently the parents discover that they are "leading with their chins". Unfortunately, this discovery doesn't stop the fight, but may force the parents to ask for help. It is here that the pediatrician should be able to give sound advice. For example, instead of merely prescribing a tonic for the poor appetite, it is his job to examine the child for physical causes, to investigate the living conditions for possible faults, and to urge the mother to retire from the fray, if a contest of wills is the basis of the trouble. He can and probably should warn her that if peace isn't made quickly the war will spread.

The child who continues to fight is bound to acquire injuries and scars, but from the mental hygiene point of view he is a better bet than the child who runs away. The latter, either because his environment is overwhelming or because he has become sensitized by a shocking experience or was born with an allergic, shrinking constitution is unable to fight when he should. Unless he receives intelligent help this child cannot face the normal vicissitudes of life or his own conscience with any degree of happiness. He attempts to deceive himself and others by developing various neurotic symptoms or by complete withdrawal from reality. The pediatrician should be on the alert to recognize the symptoms of this condi-

tion in their early stages, and should realize their gravity. He should also be fully aware of his own limitations as a mental therapist when dealing with this type of child.

Certain basic knowledge is necessary if good advice is to be given in regard to habit training and character building. The urges to live, grow, acquire and reproduce are integral parts of the child's make-up. These urges are essentially primitive in their nature and can only be brought under partial control by conscious effort. As long as life lasts they produce recurring waves of energy which must be utilized in ways that will relieve their tension. These surges of energy enter the field of consciousness of the infant and produce activity. For example, the recurring pangs of hunger appear and can only be satisfied by eating. This act, therefore, relieves the most frequent manifestation of the instinct of self preservation. In addition, the sucking of the nipple and the associated odors and taste satisfy the need for pleasure. Thus both of the basic instincts center their chief interest in the mouth area. The pediatrician is only too familiar with the various deviations from the ideal breast feeding of the infant, and a large part of his work consists of directing infant feeding. From the standpoint of nutrition he does a pretty good job. Unfortunately little attention has been paid to the necessity of satisfying the need for pleasure. The breast or bottle that flows too freely may play a part in developing an improvident, overly optimistic personality, or may lead to excessive thumb sucking. The immediate effect of an inadequate breast or of too small an opening in the nipple is well known: the infant yells and pounds and kicks to show his feeling of frustration. The same can be said with added emphasis when the food causes colic. Continuation of such conditions mean continued turmoil, worry, loss of sleep, medication, enemas, etc., and the development of both the psyche and the body is affected adversely. On the other hand, wholesome food properly fed, the early introduction of new foods and gradual weaning are sound psychologically as well as physiologically.

When the teeth come in the child has a new outlet for pleasure demands in biting. He also has a weapon wherewith to express aggression. Nail biting is supposed to occur in children who suffer from frustrations in the teething stage and to indicate tension from smouldering resentment. It is certainly a

potent weapon for annoying some parents, and if they show their annoyance by trying to break the habit, it may become a fixed type of behavior.

Weaning from the breast or bottle should take place around the end of the first year. At that time the baby has learned to use his hands well enough to handle and investigate objects, and is able to get about by crawling or walking. His curiosity knows no bounds, and nothing is safe if he can reach it. Wanton destruction is not his object but breakage doesn't disturb him. Unless he has plenty of playthings and sufficient space to work off his energy he becomes the target for many "Don't-s" and punishments which he feels are not deserved. About this same time his excretory apparatus is brought forcibly to his attention by efforts to train him. After weaning, the pleasure associated with excretion grows to the extent of superseding the pleasure of sucking, and this pleasure has previously been indulged according to his own desires. Now he learns that Mama wants him to use the chamber pot and to use it when she tells him to. He can show his love by acceding to her requests, and he soon learns that he can show his resentment by refusing. The wise parent realizes that she is asking for a favor and not a right and shows her gratitude and pleasure when he grants it. The unwise parent often starts this training too soon, demands compliance and creates resentment. The contest of wills, thus begun, results in daily fights over an extended period. The possibilities for distortion of the child's developing personality coincide with the number of ways the combatants can think of to attack and defend themselves. Under such circumstances the destruction, which at first was incidental to the child's curiosity, takes on a new meaning; he finds that it angers the parent. Since all is fair in love and war he is pleased at this discovery. Actual destruction when possible and fantasies of destruction otherwise produce an abnormal sort of pleasure. Excessive sadism or masochism may result. When the mother tells how the youngster will sit on the pot for an hour and then will defecate on the rug and call her attention to the fact to invite a spanking, the picture drawn above is well developed. Considerable undoing is necessary to repair the injury to the child's personality so that it will not affect too seriously his future behavior.

Normally the child learns how to take care of his excretory needs in a socially acceptable way before

he is three years old. The libidinal content of these actions diminishes and is sublimated into such play activity as making mud pies, playing in the sand, collecting, etc. Before this he has discovered the genitals and has begun the transfer of the libido to the new location. Rank³ has been credited with the statement that this transfer is done by the hand. It is perfectly normal for the small child to play with the genitals, and there is probably no ideation connected with such play unless the parents try to stop it. Masturbation should be looked upon as normal behavior in infancy, during the transition period from three to five, and at puberty. Other manifestations of interest in and play with the genitals are usual during the transition period and should not arouse emotional storms in the parents. Curiosity and play here, as in every other respect, are parts of the child's education and outlets for instinctual energy. Parents who are horrified at the very thought or are terrified through misconception as to the bad effects of such activity are likely to behave as the parents mentioned above who made such a botch of toilet training. Psychic traumata resulting from punishment and dire threats by such parents are the seeds from which many subsequent neuroses develop.

The temptation is great to ramble into too many details in a discussion of this sort because there are few studies more fascinating than that of the factors entering into human behavior. Society recognizes certain types of conduct as desirable, and other types as undesirable. From necessity certain rules have been established through law and custom, and punishment is meted out to the offender. Nature's laws, based on strict adherence to cause and effect, are even more exacting. The pediatrician who undertakes to act as director of the child's growth and development must, therefore, be prepared not only to combat the foes of disease that threaten his patient, but must also be prepared through study of nature's laws, to direct the nutrition of both body and the mind. Research and clinical experience have simplified the task of supervising the nutrition of the body so that today the job can be done better and with fewer lost motions than yesterday. These same instruments are dispelling the fog which has obscured the development of the personality. The time seems ripe for the pediatrician to advance to another stage of his own development and become a Mental Hygienist.

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Mental Hygiene Activities

Virginia, and more especially Richmond, will be conscious of many visitors from all parts of the United States during April and May. Furthermore Virginians, as well as the visitors, will awake to the fact that not only is the state the center of old gardens, the cradle of American history, and Jeffersonian architecture, but also it is the seat of two of the best and most important medical centers in the country. Richmond, for these and many other reasons, is to be host to six national medical societies during the short span of two weeks from April the twenty-fourth to May the ninth. Five of these deal with some phase of the brain and its disorders, and the sixth, the American Academy of Pediatrics sponsors a mental hygiene section.

On April the twenty-fourth the American Academy of Pediatrics will open a two day session: May the first to the third the Society of Neurological Surgeons meets, and from May the fourth to the ninth the American Psychiatric Association, the American Psychoanalytical Association, the American Chapter of the International League Against Epilepsy, and the National Association of Private Psychiatric Hospitals overlap in associated and joint meetings.

Are the physicians and laity of Virginia aware of the significance of these national societies meeting here? Does Virginia need neurologic, psychiatric, and mental hygiene awakening? Or has the state's progress in these fields attracted the country's outstanding psychiatrists? The state has awakened to the need of mental hygiene, and it has progressed tremendously in the past six years. It is partly in recognition of this progress that the American Psy-

chiatric is meeting here this year. We believe that the physicians of the state will find many things of interest in the psychiatric program to be presented. Some of the general topics to be discussed are the treatment of the mentally sick by physical methods, by pharmacological shock, and electric shock, and there will be sections on electro-encephalography, brain pathology, alcoholism, and other phases of psychiatric treatment and institutional guidance.

The Mental Hygiene Society of Virginia is proud of the opportunity to sponsor jointly with the American Psychiatric Association a public meeting on Thursday evening, May the eighth, in the Jefferson Hotel Auditorium. The guest speakers, Dr. Abraham Myerson and Dr. Leonard G. Rowntree, are well known in all fields of medicine. Dr. Myerson, now professor of neurology at Tufts College Medical School and clinical professor of psychiatry at Harvard Medical School, is a pioneer in the physiology and the pharmacological action of drugs on the autonomic nervous system. In addition he has written much on eugenics and inheritance of mental disease.

Dr. Rowntree, Director of the Philadelphia Institute of Medical Research and Chief of the Medical Division of the Selective Service System in Washington with the rank of Colonel in the Medical Reserve Corps of the United States Army, has contributed much to medicine in the chemical investigation of the patient. He introduced the phenolsulphonephthalein test, the dye methods of determining liver function and the blood volume of the body. He has also done extensive work in endocrinology on growth, especially experimental work with the thymus gland.

The devotees of the annual Institute of Public Affairs at the University of Virginia will have a rare treat when they attend the panel discussions on July the second. The general topic of the Institute this year is based on the present International situation. As a part of this program, sponsored by the Mental Hygiene Society of Virginia, two panel discussions will be presented, one on "National Regimentation and its Effect on Personality," and

the other on "Personality Patterns and Placement in National Defense". The subject of the evening address will be "Immediate Problems of National Morale". These subjects are not only appropriate but also vitally important to all Americans in the present state of dilemma of the populace.

The three discussants, Dr. Karl A. Menninger, Dr. Harry Stack Sullivan, and Dr. C. Macfie Campbell, are psychiatrists of exceptional ability and wide experience.

Dr. Menninger, a member of the staff of the clinic of the same name, is professor of criminology, mental hygiene and abnormal psychology at Washburn College, Topeka, Kansas, and research associate in psychiatry in the Washington School of Psychiatry, Washington, D. C. He is also the author of the widely read book, "The Human Mind".

Dr. Sullivan is president of the William Alanson White Foundation and president and faculty chairman of the Washington School of Psychiatry; he is also head of the National Health Institute at Bethesda, Maryland. Dr. Sullivan is a leading psychoanalyst and has written much on this subject. He is now psychiatric advisor to the Selective Service System in Washington.

Dr. Campbell, professor of psychiatry at Harvard Medical School, and Director of the Boston Psychopathic Hospital, has been one of the leading members of the profession in the advancement of psychiatry, in teaching, and in formulation of the principles of the American school of psychiatry, and in the development of the American Psychiatric Association; in fact, he is with William Alanson White and Adolph Meyer, one of the deans of modern psychiatry.

Physicians, social workers, professors, teachers, lawyers, ministers and all of those who are associated in the welfare of the public should honestly attempt to avail themselves of this opportunity of getting an understanding into the problem which faces us for they can do much to quell the fear in the minds of the uninformed and thereby reduce the risk of mass hysteria.

HOWARD R. MASTERS, M. D.

The Council Medical Society of Virginia

A meeting of the Council was held at the Society's office on Monday, April 7, 1941, at 3:00 P. M., its special purpose being to survey the medical resources available for civilian health in defense work. The President, Dr. Walter B. Martin, presided. Others attending were: Colonel Mills Neal, State Director of Selective Service; Colonel Ernest T. Trice, ranking medical officer of the State National Guard, and associated with Colonel Neal; Dr. Hugh H. Trout, State Representative on the National Preparedness Committee; Drs. J. M. Emmett, J. E. Knight, and H. B. Mulholland, vice-presidents; Drs. Julian L. Rawls, J. Morrison Hutcheson, James L. Hamner, W. C. Akers, Alex. F. Robertson, Jr., Andrew D. Hart, Jr., and C. B. Bowyer, councilors; and Dr. I. C. Riggin, State Health Commissioner.

In response to a request by Dr. Martin, Colonel Neal spoke, expressing appreciation for the excellent work which had been done by the many physicians on examining boards throughout the State but felt they are not as well organized as they might be and asked for further cooperation on the part of doctors making the necessary physical examinations of selectees. Of the registrants for service, 74 per cent are white and 26 per cent colored. It had been found that some doctors on the examining boards are being called on much more than others, as a number cannot serve when needed, and many have been called into military service. He hoped the councilors could assist in seeing that examinations are speeded up. Being asked how doctors on the examining boards would take suggestions from councilors, Colonel Neal said he felt doctors were making the examinations for patriotic reasons and did not think they would resent the councilors urging them to complete the work as promptly as possible.

Dr. Martin explained that a total of 7,600 men must be examined by May 1 and expressed the hope that the Council could work out a plan for completing this work. He asked Colonel Trice for any suggestions he might wish to make.

Colonel Trice said he was appointed by Governor Price as medical director to secure physicians for the examining boards, which he had done with the help of Drs. Martin and Trout, but some of the physicians had resigned from the boards because of personal work, some had been called to service, and a few had been unable to cooperate, so that something was now needed to stimulate the interest and pride of those on the boards that the examinations might be completed. He said his office is not in a position to pay for examinations but they would be glad to supply some equipment necessary in making tests. He asked Dr. Martin to explain a plan he had in mind.

Dr. Martin said he felt the doctors of the State are not organized sufficiently down to the county unit, and

suggested that each district organize a district council, composed of one member from each county, with the councilors of the State Society as chairmen of the districts. In case of such organization, he suggested that Dr. Trice write him and the councilors where the work is lagging so they might especially urge doctors in such counties to make the examinations.

Dr. Trout said he was just back from a meeting of the representatives of the Third Corps Area in Pittsburgh, and he found this plan is used and working well in Pennsylvania and Maryland.

In response to a question by Dr. Bowyer, Dr. Martin said he felt the local societies, where such exist, should make appointments on the District Councils, and that the councilors should make them in counties with no societies.

Dr. Bowyer thought the number of examining physicians in each county should be in proportion to the number of selectees to be examined. Dr. Trout said that where additional examiners are needed, Colonel Trice would see that they are appointed if names are sent him by the councilors.

Dr. Knight felt the doctors would cooperate better if the draft boards would notify physicians when the examinations are to be made and let physicians be designated to serve at such times.

Dr. Robertson said in making examinations of selectees in Augusta County, they found it necessary to call in doctors not members of their examining board to assist, but members of the board signed the certificates. Dr. Trice thought this was all right when signed by members of the boards, as it would be similar to the plan that doctors use in having technicians work for them.

Dr. Hamner said he was proud of the record made in Amelia County and the whole quota had been examined. He felt the examinations could be completed promptly by having a system suitable to each community.

In further explanation of the district councils, Dr. Martin referred to a letter he had recently sent each councilor in which he suggested, if the councilors think well of it, there might be an amendment to the By-Laws to create such district councils.

A motion was then offered by Dr. Emmett that the Council favor the establishment of a district council in each district, with the Councilor as chairman and responsible for his district council, and, further, that an amendment be made to the constitution and by-laws at the next meeting of the Society to make these permanent organizations.

Dr. Hutcheson seconded the motion and it was unanimously adopted.

Dr. Martin said he would have the Judicial Committee formulate the amendment to be presented to the next House of Delegates.

In reply to Dr. Martin's inquiry about the questionnaires, Dr. Trout said Virginia is a fraction ahead of other states in the Third Corps Area but he would like 100 per cent answers to these, and he asked the councilors if they could not obtain a completed form from every doctor and requested them to send some report on each name on the last lists sent them. These reports are to be sent directly to Dr. Trout.

The next question for consideration was that of a survey of medical needs for the civilian population, industrial practice, hospitals, medical schools, health work, etc. Dr. Trout stated he had forms sent him by the American Medical Association to be filled out for each county in the State. After presenting these for consideration, Dr. Rawls offered a motion that they be sent by the councilors to the contact men in the Council Districts to be executed. This was seconded and adopted.

Dr. Riggins said this was a real job. About three weeks ago he had undertaken a study in his office on the availability of physicians to the population, his survey being based on physicians under and over sixty years of age, whereas the questionnaire presented by the American Medical Association was on the basis of fifty-five years, under and over.

Dr. Robertson felt it would be well to have a substitute motion for that just adopted and ask Dr. Riggins to answer the questionnaires as his information would be much more accurate than what the councilors might obtain.

Dr. Rawls moved to rescind his motion about the distribution of these questionnaires, and this was seconded by Dr. Bowyer. Dr. Trout said he felt the first motion would put a lot of extra work on the societies and doctors and they would not be in a position to secure as accurate information as that available to Dr. Riggins. The question being put, it was voted to rescind the former motion.

Dr. Martin said the question now before the Council was what to do about the questionnaires, and Dr. Robertson offered a motion that the Council request Dr. Riggins to fill in such part of the questionnaires as his statistics will permit and then distribute them to the councilors to be completed. Dr. Riggins agreed to this if the councilors would be willing to accept his figures and Dr. Robertson's motion was adopted.

Dr. Martin said there had been some criticism in regard to having "open bars" in hotel rooms at the State meetings as they proved disturbing to a number of members on account of the late hours kept. Recently, in a talk with some of the committee on arrangements, it had been suggested as an alternative to ask exhibitors interested to have a cocktail hour from five to seven in the afternoons, and he wished to know how the councilors felt about this. After discussion, a motion was made and adopted to authorize the committee on arrangements to notify the exhibitors that it is the wish of

the Council that they do not set up a continuous bar but have definite afternoon hours for cocktail parties which would not conflict with the scientific sessions or sleeping hours.

It was stated that Dr. R. W. Miller, President-Elect, was absent because of illness, having been in the hospital for several weeks, and a motion was adopted that he be sent flowers from the Council with a note expressing their regret at his absence and the wish for a speedy recovery.

The secretary stated that upon written authority of Dr. Hutcheson of the Finance Committee, which was in accordance with action of the Council on October 3, 1939, she had placed \$3,000 of the Society's funds in the Savings Department of the Southern Bank and Trust Company. Upon request from the bank for this authority, she had sent them a copy of Dr. Hutcheson's letter, and would like the Council to approve this action. It was stated that the action of the Council referred to above seemed to give the Finance Committee power to invest the Society's funds as they wish, but approval was expressed of Dr. Hutcheson's letter.

As a member of the Legislative Committee, Dr. Hutcheson was requested to ask Mr. Duval to make a study of the present Medical Practice Act and to offer such suggestions and recommendations for changes as he might deem necessary at the next meeting of the Council.

It was stated there had been some criticism of the fact that doctors on induction boards are placed on a per diem basis while those on the examining boards receive no pay. Dr. Trout and Colonel Trice explained that this is because the Federal Government pays those on the induction boards while there are no funds to pay examining physicians.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,

Secretary.

Approved:

WALTER B. MARTIN,

President.

Date 4/18/41.

Correspondence

Survey of Facilities for Medical Care of the Indigent in Certain Counties of Virginia.

A subject always uppermost in the minds of health officials and doctors generally is the care of the sick, especially those unable to secure for themselves proper medical attention and hospitalization because of financial reasons. It is hoped the survey to be undertaken may throw new light on this problem. This issue also gives an editorial discussion of the subject.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HEALTH
RICHMOND

MARCH 13, 1941.

DR. W. B. MARTIN,
PRESIDENT, MEDICAL SOCIETY OF VIRGINIA,
NORFOLK, VIRGINIA

DEAR DR. MARTIN:

As you are aware, the provision of medical care to the indigent on the relief and assistance rolls presents various perplexing problems to the health and welfare agencies. For some time Dr. William H. Stauffer, Commissioner of Public Welfare, and I have felt that the interests of all concerned might be served by an objective survey of this problem. We recently learned that the National Institute of Health of the United States Public Health Service has made surveys of this character in the States of New York and Minnesota and has personnel available for making further studies of the same character at the request of other interested states.

Accordingly, at the request of Dr. Stauffer and myself, a conference was recently held in Richmond with Mr. G. St. J. Perrott, Chief, Division of Public Health Methods of the U. S. Public Health Service, and Dr. Dean A. Clark and Mr. Louis S. Reed of Mr. Perrott's staff, in the hope of obtaining the assistance of the Public Health Service in making a survey of this problem in Virginia. We at that time requested the Service to make a survey of the medical relief problem in this State, which they agreed to do. We feel that through studies of this nature much information may be secured which will be of inestimable value to all of us interested in health and welfare and to the medical profession in general.

The survey will study the procedure and arrangements through which medical care, including hospitalization and other allied services is provided to indigent charges of the local welfare agencies, with attention to such matters as the methods of authorizing physicians' services and hospital care, the remuneration paid for such services and the degree to which the arrangements are satisfactory to the medical profession, hospitals, the public agencies and others concerned in the provision of medical relief.

Since it would be impracticable to survey every county of the State, certain representative areas should be selected for study. In these areas infor-

mation will be obtained by contact with the practicing physicians, the local health and welfare officials, hospital personnel, dentists, nurses, etc. The U. S. Public Health Service will make reports of the findings of these surveys to the State Departments of Health and Public Welfare. It is of course understood that these studies are to be purely of a fact-finding character and involve no obligation on the part of the State.

It is our hope that the medical profession will cooperate in this study and it is with this in mind that I am transmitting this brief outline of the proposed plan. It is further contemplated that those assigned to make the field studies will appreciate the opportunity of conferring with you and other representatives of the Medical Society of Virginia.

I will be glad to arrange for a conference with you or whomever you may designate and staff members of the U. S. Public Health Service on a date convenient to you.

Very truly yours,
(Signed) I. C. RIGGIN,
State Health Commissioner.

NORFOLK, VIRGINIA
MARCH 14, 1941.

DR. I. C. RIGGIN,
STATE HEALTH COMMISSIONER,
RICHMOND, VIRGINIA

DEAR DOCTOR RIGGIN:

I have your letter of the 13th.

I am very glad indeed that you and Doctor Stauffer have considered the plan of having a survey of the medical care of the indigent on the relief and assistance rolls. I am sure that the physicians throughout the State would be in favor of such a fact-finding investigation and would be glad to cooperate in any way possible.

I am sending a copy of your letter to Doctor John Hundley, who is Chairman of the Committee on Medical Economics of the Medical Society of Virginia.

It would probably be well to have him attend a conference and if you will let me know what time is convenient for you, I will ask Doctor Hundley to be there and I will make every effort myself to be present.

Sincerely yours,
(Signed) WALTER B. MARTIN,
President, Medical Society of Virginia.

Military and Naval Section

In order to speed up the examinations of selectees, the following have been appointed as new

Examining Physicians on Local Boards

Dr. J. T. Booth, Ashland.
 Dr. George B. Craddock, Lynchburg.
 Dr. H. R. Carter, Ashland.
 Dr. Hawes Campbell, Jr., Hanover.
 Dr. J. Glenn Cox, Hillsville.
 Dr. J. F. Chairsell, Christiansburg.
 Dr. Dean Creger, Radford.
 Dr. R. M. DeHart, Radford.
 Dr. D. S. Divers, Pulaski.
 Dr. C. A. Easley, Jr., Danville.
 Dr. J. Frank Folk, Warrenton.
 Dr. Linwood Farley, Richlands.
 Dr. H. E. Ferguson, Richmond.
 Dr. H. R. Farley, Pulaski.
 Dr. M. M. Gordon, Martinsville.
 Dr. A. B. Gravatt, Mechancisville.
 Dr. Fred Gochenour, Upperville.
 Dr. Earl C. Gates, Chester.
 Dr. C. E. Holderby, Williamsburg.
 Dr. Cecil W. Hickam, Pulaski.
 Dr. E. J. Haden, Ore Bank.
 Dr. John D. Hamner, Jr., Ashland.
 Dr. P. L. Hill, Petersburg.
 Dr. J. Walker, Jackson, Machipongo.
 Dr. L. P. Jones, Emporia.
 Dr. G. R. Joyner, Suffolk.
 Dr. D. W. Kelly, Jr., Culpeper.
 Dr. Thomas E. Knight, Farmville.
 Dr. Frank Klune, Lorton.
 Dr. F. K. Lucas, Blacksburg.
 Dr. R. S. LeGarde, Damascus.
 Dr. D. C. Mayes, Church Road.
 Dr. H. L. Mitchell, Lexington.
 Dr. J. C. Moxley, Independence.
 Dr. R. A. Morison, Abingdon.
 Dr. A. E. Murray, Beaverdam.
 Dr. B. H. Martin, Richmond.
 Dr. Richard Mason, The Plains.
 Dr. Samuel H. Mirmelstein, Newport News.
 Dr. H. M. Price, Martinsville.
 Dr. G. W. Phipps, Independence.
 Dr. Robert T. Pierce, Jr., Newport News.
 Dr. John W. Pierce, Suffolk.
 Dr. Wade C. Payne, Haymarket.
 Dr. N. G. Patteson, Ore Bank.
 Dr. Harold W. Potter, Newport News.
 Dr. W. O. Pollard, Speers Ferry.
 Dr. Morgan B. Raiford, Franklin.
 Dr. J. Gordon Rennie, Pulaski.
 Dr. Bruce Randolph, Richmond.
 Dr. A. C. Ray, Jr., Ashland.
 Dr. A. J. Russo, Portsmouth.
 Dr. P. A. Richards, Vinton.

Dr. I. K. Redd, Ellerson.
 Dr. Russell E. Reid, Newport News.
 Dr. Charles Rosenberg, Lorton.
 Dr. N. P. Snead, Cartersville.
 Dr. T. E. Stanley, Beaverdam.
 Dr. Willis M. Sprinkle, Marion.
 Dr. J. W. Sinclair, Warrenton.
 Dr. B. C. Schuler, Shenandoah.
 Dr. P. S. Smith, Abingdon.
 Dr. Ernest Scott, Lynchburg.
 Dr. E. P. Tompkins, Lexington.
 Dr. T. S. Ussery, Leesburg.
 Dr. Edwin Vaughan, Ashland.
 Dr. Judson Vaughan, Ashland.
 Dr. A. G. Vaden, Temperanceville.
 Dr. John D. Williams, Manassas.
 Dr. Frank D. Whitworth, Front Royal.
 Dr. George C. Williams, Pearisburg.
 Dr. J. J. Waff, Shenandoah.
 Dr. J. W. White, Luray.
 Dr. J. A. Wright, Sr., Doswell.
 Dr. J. A. Wright, Jr., Doswell.
 Dr. P. H. Winston, Clarksville.
 Dr. A. McGarvey Wallace, Gate City.
 Dr. S. H. Yokeley, Meadowview.

Medical Advisory Boards and Boards Served

New members appointed to Advisory Boards are:

- No. 9—NOTTOWAY AND AMELIA COUNTIES
 Dr. James L. Hamner, Mannboro.
 No. 14—HENRICO, CHESTERFIELD, CHARLES CITY, NEW KENT, HANOVER, GOOCHLAND AND POWHATAN COUNTIES
 Dr. A. L. Herring, Richmond.
 Dr. Frank N. Pole, Richmond.
 No. 29—CITY OF CHARLOTTESVILLE, AND ALBEMARLE, NELSON, BUCKINGHAM, FLUVANNA AND GREENE COUNTIES
 Dr. Edgar W. Kirby, University.
 No. 33—PITTSYLVANIA COUNTY AND CITY OF DANVILLE
 Dr. M. H. Watson, Danville.
 No. 40—WASHINGTON COUNTY AND CITY OF BRISTOL
 Dr. R. A. Morison, Abingdon.
 Dr. V. M. Cox, Bristol.

Medical Reserve Officers

In addition to those listed in the April MONTHLY, the doctors listed below have been ordered to extended active duty with the regular army by the commanding general of the Third Corps Area:

Major Earl Joseph Haden, Ore Bank—Fortress Monroe.
 Major George Frank Holler, Waynesboro—Camp Stewart, Ga.
 Capt. John Newton Dunn, Blackstone—Camp Lee.
 Capt. Paul S. Hill, Harrisonburg—Fort Eustis.
 Capt. Frank Bernard Schultz, Falls Church—Indiantown Gap, Pa.
 Capt. James Marion Suter, Bristol—Camp Lee.
 Capt. Thomas M. Vorbrinck, Norfolk—Fortress Monroe.

- Lt. Samuel M. Bloom, Clifton Forge—Camp Lee.
 Lt. Paul K. Candler, Reedville—Fort George G. Meade, Md.
 Lt. Frank Wm. Claytor, Roanoke—Fort Bragg, N. C.
 Lt. John B. Claytor, Jr., Roanoke—Camp Livingston, La.
 Lt. Thos. H. S. Ely, Jonesville—Fort George G. Meade, Md.
 Lt. Charles Francis Finley, Arlington—Fort George G. Meade, Md.
 Lt. John Edward Fissel, Newport News—Fort George G. Meade, Md.
 Lt. Hamilton Douglas Fitzpatrick, East Radford—Fortress Monroe.
 Lt. Julius Fogel, Lynchburg—Fort Benning, Ga.
 Lt. Jefferson Bishop Kiser, Emporia, Fort Eustis.
 Lt. Roscoe I. McFadden, Newport News—Fort George G. Meade, Md.
 Lt. George Robt. Rosenbaum, Jewell Ridge—Fort George G. Meade, Md.
 Lt. Albert John Russo, Check—Fort Belvoir.
 Lt. John Dennis Snider, Ashburn—Fort George G. Meade, Md.
 Lt. Harry Steinberg, Bastian—Fort George G. Meade, Md.
 Lt. William Lyons Taliaferro, Norfolk—Fort George G. Meade, Md.
 Lt. John Hoge Woolwine, Jr., Blacksburg—Fort George G. Meade, Md.
 Lt. Ralph G. Rohner, formerly Richmond, but more recently of Mitchell, Ind.—Station Hospital, Edgewood Arsenal, Md.

Correction

- Lt. Joseph T. Phillips, Jr., whose name appeared in the last issue as being from Newport News, should have been Norfolk. He is at Fort Eustis.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for March, 1941, compared with the same month in 1940 and for the period of January through March, 1941, compared with the same period in 1940 follows:

	Mar. 1941	Mar. 1940	Jan.- Mar. 1941	Jan.- Mar. 1940
Typhoid and Paratyphoid Fever	12	13	28	30
Diarrhea and Dysentery	56	76	141	200
Measles	9,820	437	14,003	667
Scarlet Fever	232	200	635	561
Diphtheria	48	56	122	187

Poliomyelitis	2	1	7	5
Meningitis	10	6	24	20
Undulant Fever	0	0	3	4
Rocky Mountain Spotted Fever	0	1	1	3
Tularaemia	2	1	15	24

THE RHEUMATIC FEVER PROGRAM

Many physicians practicing in the southern states are of the opinion that rheumatic fever is not an important disease in their territory. However, recent studies and observations seem to indicate that it is quite prevalent not only in the south but even in tropical countries.

In May 1940, a children's cardiac program was undertaken by the state Department of Health in cooperation with the Out-patient Department of the Medical College of Virginia. This activity was designed as a demonstration and study of the incidence of this disease, and the need for proper care and treatment of these cases. The program's primary objective is to prevent the damage caused in children by rheumatic fever through early diagnosis and by prophylactic and curative treatment.

The basic idea, involving prevention of heart-crippling conditions and rehabilitation of those already victims, is in line with the purposes behind the orthopedic branch of the State Health Department's Crippled Children's Bureau.

It is expected that valuable statistical facts will be collected relative to the frequency of rheumatic fever in Virginia, its manifestations, predisposing factors, and prognosis. Already, there is hope that earlier accurate diagnosis may be accomplished, and more effective prophylactic and curative treatment evolved. While naturally, research projects will develop from the program, its main function will be active assistance to indigent children.

For the present, at least, congenital heart deformities will be included with the hope that supervised hygienic care may lessen the incidence of bacterial endocarditis (the gravest complication) as well as other infections. In addition, children diagnosed as possible cardiacs will be included mainly for prolonged care and observation. Those in this latter group while having various heart murmurs or irregularities, cannot be labeled as victims of rheumatic fever, syphilis or possessing congenital heart deformities.

The present program includes children and adolescents from the City of Richmond and Henrico County. They are admitted to the clinic up to twenty-

one years of age, and are eligible for hospital and convalescent care up to the age of sixteen. Patients are referred by private physicians, school physicians, child-caring institutions, hospitals and other children's clinics. The economic status of their family should conform to that required for admission to any of the other clinics at the Medical College of Virginia Out-patient department at which the cardiac clinic is held.

The program personnel consists of a cardiologist, pediatrician, public health nurse, social service worker, and special clerk-stenographer. The latter three are full-time workers, the cardiologist and pediatrician being part-time workers. This personnel, as well as the clinic and hospital equipment and routine, and charting system, are set up in conformity with the requirements of the American Heart Association.

New Members

New members of the Medical Society of Virginia since the list published in the December 1940 issue of the MONTHLY are:

Dr. Edward Phelps Ambrose, Jr., Christianburg.
 Dr. Bathurst Browne Bagby, Jr., Richmond.
 Dr. William Linwood Ball, Richmond.
 Dr. Lee Scott Barksdale, Hopewell.
 Dr. Ruth Barnhart, Roanoke.
 Dr. Samuel Michael Bloom, Clifton Forge.
 Dr. Floyd Eugene Boys, University.
 Dr. George Hopkins Carr, Jr., Portsmouth.
 Dr. Clarence Conway Chearning, Jr., Richmond.
 Dr. John Custis Crawford, Norfolk.
 Dr. Jerome Feldman, Richmond.
 Dr. Louis Friedman, Norfolk.
 Dr. Eugene Miles Fusco, Grundy.
 Dr. Gerhard Gabriel, Abingdon.
 Dr. Edward Ellis Haddock, Richmond.
 Dr. Herman Lee Harris, Richlands.
 Dr. Richard Llewellyn Hudnall, Beverlyville.
 Dr. Abraham Meyer Jacobson, Roanoke.
 Dr. Brock Darden Jones, Jr., Norfolk.
 Dr. John Hobart Judson, Arlington.
 Dr. Benjamin Milton Kagan, Richmond.
 Dr. Bernard Katzen, Roanoke.
 Dr. Jefferson Davis Kernodle, Richmond.
 Dr. Thornton Kell, Bluefield.
 Dr. Edgar Willis Lacy, Jr., Richmond.
 Dr. Meyer Henry Legum, Norfolk.
 Dr. Thomas Addison Morgan, Franklin.
 Dr. Raymond Ben Newman, Hampton.
 Dr. Samuel Morton Novak, Alexandria.

Dr. Sidney Grey Page, Jr., Richmond.
 Dr. John Strother Pearson, Jewell Ridge.
 Dr. Edward Williamson Perkins, Richmond.
 Dr. Seth Bridgman Perry, Hopewell.
 Dr. Joseph Thomas Phillips, Jr., Norfolk.
 Dr. Algerd Powell, Roanoke.
 Dr. Stanley Hobson, Powell, Portsmouth.
 Dr. Joseph Alexander Robinson, Richlands.
 Dr. Robert Ralston Rudolph, Roanoke.
 Dr. Milton Salasky, Norfolk.
 Dr. John Hunter Selby, Alexandria.
 Dr. Ben Steingold, Norfolk.
 Dr. Lewis Tilghman Stoneburner, III, Richmond.
 Dr. William Wickham Taylor, Norfolk.
 Dr. George Douglas Vermilya, Richlands.
 Dr. Glenn Leland Walker, Roanoke.
 Dr. Lewis Klair Woodward, Jr., Front Royal.
 Dr. Frank Anthony Zack, Newport News.
 Dr. Francis Buerk Zimmerman, Leona Mines.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN W. HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Norfolk.

The Woman's Auxiliary to the Norfolk County Medical Society held its regular meeting on March 25, in the "Tea Room" at Ames and Brownley. It was decided to make a \$50.00 contribution to the Norfolk Tumor and Cancer Control Clinic and to transfer to the treasury of the Tidewater Memorial Hospital \$50.00 to be used for the next patient in the Auxiliary bed. The Auxiliary is helping with the Woman's Field Army Cancer Control drive with Mrs. Southgate Leigh, Jr., as chairman. Mrs. C. J. Devine was appointed chairman for the Community Fund drive among the doctors. Mrs. W. P. Adams, President-Elect, and chairman of the "Bulletin" reported four subscriptions. A short story on the Doctor's wife was read by Mrs. C. M. McCoy, Public Relations chairman.

After the business session, there was a luncheon

in honor of Mrs. Griffin W. Holland, President of the State Auxiliary. Other guests were Mrs. Holland's daughter, Mrs. Lawson of Eastville, Dr. Lockburn B. Scott, secretary of the Norfolk County Medical Society, Dr. Herbert Rogers, a member of the Advisory Board, and Dr. William Lett Harris.

"Doctors' Day" was celebrated by presenting to the Norfolk County Medical Society a projector for use in showing slides at the medical meetings.

During luncheon, a short fashion show was given with the doctors' wives acting as models.

The next meeting will be held on May 2, at the home of the president, Mrs. Albert Horton.

RUTH WILSON,
Publicity Chairman.

Northampton-Accomac.

The Woman's Auxiliary to the Northampton-Accomac Medical Society held its quarterly meeting on April 1, at the home of Mrs. E. W. P. Downing of Franktown, with seventeen members present.

The *Hygeia* chairman, Mrs. C. E. Critcher, reported that this magazine had been replaced in five more Accomac schools.

A letter was read from Mrs. Fletcher J. Wright thanking the Auxiliary for a check for the Memorial Bed at Catawba Sanatorium.

A benefit bridge party for general funds is planned for June. The mid-summer picnic plans have been given to a committee for definite arrangements.

Mrs. S. K. Ames, State chairman for Cancer Control, spoke briefly, giving a message from Dr. Shelton Horsley, and stressed periodic examinations.

The State President, Mrs. Griffin W. Holland, introduced Mrs. E. Latane Flanagan, Richmond, State President-Elect, who spoke on "This Job of Ours".

A reading and recitation by Mrs. E. W. P. Downing was much enjoyed.

Following an election of delegates to the State meeting, there was an auction of foods for general funds.

The October meeting will be held at the home of Mrs. John B. Mears, at Keller.

CATHERINE RUSH TROWER, *Chairman,*
Press and Publicity.

The Williamsburg-James City Auxiliary

Met at the home of Mrs. E. T. Terrell on March 11. Mrs. Griffin W. Holland, who had accepted an invitation to be guest speaker, was unable to

attend on account of illness. Miss Mable Massey, Home Demonstration Agent, gave a talk on old glassware and exhibited some lovely pieces.

MARION HOLDERBY,
President.

Last Call for A.M.A. Meeting.

This is the *Last Call* for reservations for the nineteenth annual convention of the Woman's Auxiliary to the American Medical Association, which will be held at Hotel Carter in Cleveland, Ohio, June 2-6. All Cleveland extends a hearty welcome to you!

Virginia women who met the National President, Mrs. V. E. Holcombe of Charleston at the White Sulphur Springs meeting, last year, will especially wish to attend.

The Story of Jane Todd Crawford.*

(Continued from page 227, April issue)

McDowell tells us that he bared the patient's swollen abdomen, marked with a pen the course of the incision, and handed the knife to his nephew so that he might share any possible credit. Seeing the gleaming blade poised over her body Mrs. Crawford closed her eyes and started to sing a hymn. When the knife bit deep her voice quavered, but the tune continued to fill the little room. Dr. McDowell started on the serious part of the operation. Whenever Mrs. Crawford's voice, attempting hymn after hymn, shook with unusual agony, he whispered tender and soothing words as he might to a frightened child.

Suddenly the silence of the street gave way to a confused murmur; church was out. More than a hundred people gathered in front of the house, some curious, some sympathetic, but the most vocal screaming with righteous indignation. In the room where Mrs. Crawford lay, her anguished hymns were drowned out by loud shouts of male voices calling for the operation to stop. But the suffering woman, her knuckles white where they clenched the table, sang bravely on. According to McDowell's daughter the mob swung a rope over a tree so they might lose no time in hanging the surgeon if the patient died. Finally, as the minutes passed with no news from within, some of the more excited dashed for the door

*This paper, based on material from "Doctors on Horseback" was prepared and read by Mrs. John R. Hamilton of Nassawadox, Va., at a recent meeting of the Woman's Auxiliary to the Accomack-Northampton County Medical Societies.

and tried to smash it in, but the sheriff and the more sober citizens intervened.

Within, Dr. McDowell proceeded with the operation and removed a tumor weighing fifteen pounds from the ovary. The sac weighing seven and a half pounds was extracted from the Fallopian tube. The operation lasted about twenty-five minutes. After the usual dressings were applied the sound of hymns, which had been getting weaker and weaker, stopped at last. The half-unconscious patient was taken to her bed. When the mob learned that the operation was over and Mrs. Crawford lived there was silence for a moment followed by a cheer.

Actually the real danger was yet to come. Would Mrs. Crawford develop peritonitis. Dr. McDowell put her on the depleting diet then thought essential for combating fevers, and waited. When he came into her room five days later he was horrified to see her standing up making her bed. At his grave reproof, she laughingly replied that she had never been able to lie still. By means of persuasion, dire warnings and threats, he induced her to remain an invalid for twenty-five days, but at the end of that time she insisted on riding back to the neglected household tasks that had been worrying her more and more. With renewed energy she threw herself into the active life of a pioneer, moving on a short time later to a frontier outpost in Indiana, where there was new land to conquer from the forest. She remained in excellent health until her death at the age of seventy-nine.

The record tells us that all her children were, like their parents, respected citizens. The oldest son became a minister and served the Presbyterian church at Graysville, Indiana. Jane Crawford spent her last years with him. She died in 1842, thirty-two years after the operation. Her tombstone is standing four miles from the village in the Johnson cemetery. Her youngest son, Thomas was mayor of Louisville in 1859 and 1860.

McDowell's operation was one of the most important in the history of surgery. Although ovarian tumors are so common a malady that some specialists now treat more than a hundred a year, his cure for this otherwise fatal condition was only a lesser part of his discovery. More significant still was his demonstration that the abdominal cavity could be cut into with impunity. Indeed, his operation was a forerunner of a major part of modern surgery; its success combined with a revival of Caesarean sections to destroy a false taboo and blaze the way for other surgeons

who invaded the uterus, the spleen, the kidney, the gall-bladder and the liver. Every operation for gall-stones or appendicitis is a lineal descendant of one daring experiment made in the wilderness of Kentucky.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, review notes will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

An Introduction to Dermatology. By RICHARD L. SUTTON, M.D., Sc.D., LL.D., F.S.R. (Edin.), Emeritus Professor of Dermatology, University of Kansas School of Medicine. And RICHARD L. SUTTON, JR., A.M., M.D., L.R.C.P. (Edin.), Assistant Professor of Dermatology, University of Kansas School of Medicine. Fourth Edition. St. Louis. The C. V. Mosby Company. 1941. Octavo of 904 pages. With 723 illustrations. Cloth. Price, \$9.00.

Science and Seizures. New Light on Epilepsy and Migraine. By WILLIAM GORDON LENNOX, M. D., SC. D. HON., Assistant Professor of Neurology, Harvard University Medical School; Visiting Neurologist, Boston City Hospital; Secretary Harvard Epilepsy Commission; etc. Harper and Brothers. New York. 1941. Octavo of xiii-258 pages. With 10 illustrations. Cloth. Price \$2.00.

The Avitaminoses. The chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By Walter H. Eddy, Ph. D., Professor of Physiological Chemistry, Teachers College, Columbia University; etc. And Gilbert Dalldorf, M. D., Pathologist to the Grasslands and Northern Westchester Hospitals, Westchester County, N. Y. Second Edition. Baltimore. The Williams and Wilkins Company. 1941. Octavo of xiii-519 pages. Cloth. Price \$4.50.

The Mask of Sanity. An Attempt to Reinterpret the So-Called Psychopathic Personality. By Hervey Cleckley, B. S., B. A. (Oxon), M. D., Professor of Neuropsychiatry, University of Georgia, School of Medicine, Augusta. St. Louis. The C. V. Mosby Company. 1941. Octavo of 298 pages. Cloth.

Merchants in Medicine. By Emanuel M. Josephson, M. D., Fellow, American Association for the Advancement of Science; etc. Chedney Press. New York. 1941. Pamphlet of 223 pages. Price \$1.50.

Techniques of Conception Control. By Robert Latou Dickinson, M. D., Former President, American Gynecological Society. And Woodbridge Edwards Morris, M. D., General Medical Director, Birth Control Federation of America. A practical manual issued by the Birth Control Federation of America. Inc. Baltimore. The Williams and Wilkins Company. 1941. Pamphlet of 56 pages. Illustrated. Price 50 cents.

MacLeod's Physiology in Modern Medicine. Edited by PHILIP BARD, Professor of Physiology, Johns Hopkins University School of Medicine. With the Collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania; George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine; Howard J. Curtis, Instructor in Physiology, Johns Hopkins University School of Medicine; Harry Eagle, Passed Assistant Surgeon, U. S. Public Health Service, and Lecturer in Medicine, Johns Hopkins University School of Medicine; Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine; Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University; Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-endocrine Research, etc.; J. M. D. Olmsted, Professor of Physiology, University of California; and Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Ninth Edition. St. Louis. The C. V. Mosby Company. 1941. Octavo of xxvi-1256 pages. Illustrated. Cloth. Price, \$10.00.

Electrocardiography in Practice. By ASHTON GRAYBIEL, M. D., Instructor in Medicine, Courses for Graduates, Harvard Medical School; Research Associate, Fatigue Laboratory, Harvard University; and Assistant in Medicine, Massachusetts General Hospital. And PAUL D. WHITE, M. D., Lecturer in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, in charge of the Cardiac Clinics and Laboratory. W. B. Saunders Company, Philadelphia. 1941. 319 pages, with 272 illustrations. Cloth.

Electrocardiographic interpretation is certainly one field in which statistics are paramount importance in the formation of standards. Dr. White, being both a good statistician and an eminent cardiologist, is, therefore, the kind of person who should undertake such a task as is represented here. We are fortunate that the man who has given us the modern classic on heart disease has also now with Dr. Graybiel produced this practical treatise.

The physical make-up of the book, with a full-sized tracing on one page and its interpretation on the opposite page, facilitates the work of reference. Each cardiogram is also accompanied by a brief case history. The new terminology for precordial leads is used, and lead 4F is employed exclusively. The usual common and rare conditions are covered, as one would anticipate, with nothing spectacularly new or different added, but the work is technically well done and the interpretations conservatively sound. There are numerous practice tracings without diagnostic sub-titles. No mention is made of the pattern (elevated ST segments in all 4 leads and upright T waves) noted by various authors in some cases of pericarditis.

One of the most valuable parts of the book is the short appendix of only three pages, which is entitled

"Analytical Electrocardiographic Index". In this brief section is summarized the criteria for, and the usual diseases associated with abnormality of the various waves, complexes, and segments of a tracing. This index will serve as a point of departure for the student who recognizes that a cardiogram is not normal in certain respects but who cannot otherwise decide under what heading in the "General Subject Index" to check his suspicions.

EDWARD A. DELARUE, JR., M. D.

The Doctor and the Difficult Child. By WILLIAM MOODIE, M.D., F.R.C.P., D.P.M., Medical Director, London Child Guidance Clinic and Training Centre. 1940. New York. The Commonwealth Fund. 214 pages. Cloth. Price, \$1.50.

This excellent book written by Dr. Moodie represents the doctors angle in treating the "Problem Child". It contains a detailed discussion of various behaviors like stealing, lying, backwardness, nervousness, enuresis, violent behavior, sex difficulties, anxiety, disturbance of sleep, etc.,—as well as treatment of same.

Although many important books on this subject have been written by psychologists and educators, the observations of an M.D. are most valuable to us. Among the various chapters, I found those on nervousness, psychoses, backwardness and enuresis very instructive. Although the book is written in a very readable fashion, it covers the most important behavior problems of children.

In our day when so much attention is being paid to the development of a healthy mind, a knowledge of this book is both very helpful and even necessary.

HARRY BRICK, M.D.

Office Urology. With a Section on Cystoscopy. By P. S. PELOUZE, M.D., Assistant Professor of Urology, University of Pennsylvania; Consulting Urologist, Delaware County Hospital; Special Consultant to United States Public Health Service; etc. W. B. Saunders Company, Philadelphia. 1940. Octavo of xi-766 pages. With 443 illustrations, 19 of them in color. Cloth. Price, \$10.00.

This book offers to the "budding urologist" the practical experience of a man who has thoughtfully spent many years in office practice. It has the virtue of completeness to the young man finishing a residency in urology; the volume can be used as a direct guide for everything from office lay-out to the choice of necessary instruments. Emphasis is laid on the methods of relief of the minor complaints which contribute so little to the interest of urologic practice and so much to the discomfort of the populace at

large. The chapters on the study of urine and prostatic fluid are especially good. Many urologists and most general surgeons who read this section will be amazed at the deductions which can be made from thoughtful study of these fluids.

Where Dr. Pelouze adheres strictly to office practice, the book is magnificent and a valuable contribution to urology. The chapter on the upper urinary tract is routine. The article on pyelitis or pyelonephritis the study of which is largely office practice could profitably be expanded particularly with reference to therapy. The illustrations are excellent, the only exception being figure 161. The style is that of an educated cultured man with a flair for the choice of the right word. It is possibly a trifle prolix. These minor criticisms are in no way intended to give the impression that the book is not, as a whole, a valuable acquisition to the field of urology. It is required reading for urologic buds and general surgeons.

CHARLES M. NELSON, M.D.

It Is Your Life. Keep Healthy. Stay Young. Live Long. By MAX M. ROSENBERG, M.D., Formerly in charge of Clinical Laboratory O.P. Dept. Beth Israel Hospital, Clinical Assistant in Internal Medicine, Beth Israel Hospital, Clinical Assistant in Pediatrics, Gouverneur Hospital. The Scholastic School Press. New York. 1940. Octavo of 450 pages, illustrated. Cloth. Price, \$2.50.

This is one of the worst books by a physician that I have ever reviewed. To fully criticize it would entail a manuscript longer than the book itself. Justification for the above remarks can be found throughout the book. Being pharmacologically inclined, the reviewer was struck by what was presented in chapter 12, entitled "Drugs, Alcohol, Tobacco, Tea, Coffee, Cocoa, Chocolate. How They Injure Health and Shorten Life. Headaches and Their Treatments." In this fragment we encounter such choice tidbits as the following bearing on sulfanilamide: "Yet many doctors will continue prescribing it, just as they are prescribing many other poisonous coal-tar and other products because in some one case they may see a spectacular result, which could positively have been attained by a simpler and safer treatment." And then again there is this needless blasphemy to our profession, in the author's suggestion

to the lay patient: "Do not hesitate to be critical even of your doctor when he is using destructive poisons to heal your ills. Ask him to use methods and medicines that will unquestionably bolster up your vitality and increase your natural resistance in fighting the disease, rather than have him administer something that will relieve you temporarily of a symptom but will ultimately be the cause of many worse ones." It is when the author preaches on alcohol that he really reaches his acme in the way of absurd-non-scientific statements. Equally as confusing is his tendency to make a statement and then refute it. As an instance of this he says "No scientific proof can be adduced to show that alcohol has any beneficial effect on health"; four pages later we encounter the statement "Light wines and beer are often of value in stimulating the appetite and helping digestion, especially in the aged and debilitated." In speaking of tobacco the author without comment dismisses scientific evidence to the contrary and gives nicotine as one of the primary causes of thrombo-angiitis obliterans. And so it goes.

If the reader has succeeded in getting this far in the book, he is quite ready to make use of the self-medication (incidentally ever abundant) hinted for the treatment of migraine and "many other types of intracranial headaches:

Caffein citrate, 12 grains.
Spirit ammonia aromatic.
Spirit ether compound.
Tincture lavender compound.
Tincture cardamom compound.
Of each 6 drams.

Mix. Take a teaspoonful, well diluted with water, every three hours; the dose may be repeated every hour two or three times for more prompt relief."

Interspaced between many unfortunate statements, a few samples of which have been given above, there is information of interest and value to the layman. Unfortunately, the unwarranted and unjustifiable remarks will tend to undo any good to which the book may aspire, and so this treatise is recommended for the immediate relegation to the limbo of useless and actually harmful books.

H. B. HAAG, M.D.

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Editorial

The Nursing Situation in Virginia.

For the past ten years there have been marked changes made in the requirements for admission, training and graduation of nurses.

The State Nurses Association has followed the lead of the national association until the requirements for the teaching of nurses have become so burdensome that many hospitals have given up their training schools and have employed graduate nurses to conduct their institutions. Time was when a young woman who wished to enter the profession of nursing was admitted to the training school of some hospital and paid her way with her work, until she received her diploma. But, as the didactic requirements increased, she could give less and less of her time to the practical side and must spend more and more of her time in the class room, with trained paid instructors both here and in the laboratories, as this ever advancing curriculum demanded. Then it became apparent that the nurse must pay tuition fees to meet the increased cost of more classes and laboratory instruction. This has meant fewer training schools and, as a consequence, fewer nurses.

And now comes war or the imminent shadow of war! More and more nurses are needed in the ever growing number of camps and army hospitals. War takes the best, the youngest, the strongest, and it takes as many as it needs. It may not be denied.

More, and more nurses, are needed at a time when many wise men say there is a peace time scarcity of nurses to begin with. And so, those in authority have a huge problem dumped into their laps—how to get more adequately trained nurses quickly to meet the needs of the ever increasing army, how to fulfil their obligation to the people at home, to care for the sick and to see that the hospitals who graduated so many of these leaders themselves do not suffer. It is truly a big problem and it is a problem of the deepest significance, not only for the nursing profession but the medical profession and for the hospitals and for the public. It is a time of patience, tolerance and earnest cooperation in the interest of us all.

W.L.P*

The U.S.P.H. Survey of Medical Care of the Indigents in Virginia.

In recent years all sorts of statements have been made about the medical care of the indigent and low income group—some of them facts, some of them doubtless figments of the imagination. We have been convinced that an enormous number of persons fall into this classification and we have been assured that their medical care was astonishingly inadequate.

*W. Lowndes Peple, M.D., Emeritus Professor of Clinical Surgery, Medical College of Virginia, Richmond.

In Virginia for several years the state Health and Welfare departments, with the help of doctors, dentists, nurses, hospitals and the public have been attempting to meet this situation as best they could wherever they found it. No one seems to know just what has been accomplished. It is now proposed with reason to utilize the facilities of the United States Public Health Service to conduct a survey to investigate all phases of the medical care of the indigent on relief and assistance rolls in the state. It will be made by a physician and a statistician through samplings of a few representative counties. It is proposed to limit the survey to a fact-finding study, the results of which will be filed with the departments of Health and Welfare. The president of the Medical Society of Virginia and the Chairman of the Society's Committee on Medical Economics are in accord in approving this survey and in urging the medical profession to answer promptly when called upon for information.

Similar studies have been made in New York and Minnesota, but up to the present time no printed report of the results has been made available to the general public. What may be the disposition of the Virginia survey we do not know. It is hoped that all interested will be in a position to learn from it how many indigents there are on relief and assistance rolls in this state, how much medical care they have needed, how well that care has been provided, how satisfied with it are the doctors, dentists, nurses and hospitals who have given the care, and how satisfied with it are its recipients; what we have to look forward to in the future in regard to it and what improvements should be recommended.

The American Psychiatric In Richmond.

In a few days the American Psychiatric Association, with a membership of approximately 2,500 physicians, will hold its 97th annual meeting in Richmond. The interest of Virginia doctors is enhanced by the fact that the association will have before it for election as its president-elect the nomination of Dr. J. K. Hall of Richmond. This is an honor not previously accorded a Virginia doctor.

Two Virginians were among the original thirteen

medical superintendents who assembled at Jones's Hotel in Philadelphia October 16, 1844, to found the Association of Medical Superintendents of American Institutions for the Insane, as the organization was first called. They were Dr. Francis T. Stribling of the Western Lunatic Asylum at Staunton and Dr. James M. Galt of the Eastern Lunatic Asylum at Williamsburg. In 1893 the name of the association was changed to the American Medico-Psychological Association. It was not until 1921 that it assumed its present name. The Richmond meeting this year promises to be an important event with the leading psychiatrists of the state naturally assuming an active part and with many distinguished guests from far and wide being entertained within our gates.

The Time Incidence of Syphilis.

For several years now an active antisyphilitic campaign has been conducted in this country. We were told that one out of every ten persons was at one time or another the victim of this disease. The high incidence of syphilis among the colored race was well known and various hospital statistics were available to give the incidence of the disease among the white population. There have been skeptics who doubted that syphilis was anything like as prevalent in this country as the leaders in the campaign would have us believe.

The statistical report of the medical findings among 17,540 registrants under the selective service act in the New York City area up to January 31, 1941, brings to light some interesting facts concerning the national health among the young men of military age. Perhaps the most striking figures in this report deal with the incidence of syphilis. "There were only 121 who gave two positive serological tests, some of which were of asymptomatic syphilis. There was one case of aneurism of the aorta and four cases of syphilis of the central nervous system, making the total number of syphilis cases found 126, a percentage total of 0.72."

These figures accord well with the experience of the average doctors whose patients are chiefly drawn from the white middle class.

Proceedings of Societies

Lynchburg Academy of Medicine.

Following a delightful steak dinner the regular meeting of the Academy was held at the Lynchburg General Hospital, April 7, with the President, Dr. Powell G. Dillard, presiding.

By a general show of hands, thirty-three members indicated their willingness to participate in any emergency which might arise in the State requiring medical attention.

Dr. Harper officially announced the opening of a premature station with ambulance at the Lynchburg General Hospital. He advised this was open to any member of the Lynchburg Academy of Medicine. The cost to the patient was \$1.00 per day.

Dr. Kenneth Cooper was elected to membership.

Dr. James Thomson, neurosurgeon, Medical College of Virginia, presented a very interesting paper on "Scalenus Anticus Syndrome".

Dr. Leo Hand, in charge of anesthesia at the Lahey Clinic, reviewed the more recent forms of anesthesia and their application in a paper titled "Recent Advances in Anesthesia."

The Nelson County Medical Society,

At its regular meeting held at Lovingston, March 24, elected the following officers for the year 1941: President, Dr. W. M. Tunstall (re-elected), Lovingston; vice-president, Dr. E. C. Kidd, Lovingston; and secretary-treasurer, Dr. J. F. Thaxton (re-elected), Tye River. Delegate and alternate to the State Society meeting were also named at this time.

The subject of the increase in annual dues to the Medical Society of Virginia was brought up and freely discussed by all members present. It was the consensus of opinion that, in as much as the increase in dues was for the purpose of employing special counsel to prosecute illegal practitioners of medicine in the State, this was unnecessary and uncalled for, with the commonwealth attorneys not only competent but also paid for prosecuting these cases. The Nelson County Medical Society therefore goes on record as opposing this increase for this purpose and the secretary was instructed to notify the secretary of the State Society, with the request that those responsible for this action on the part of the State

Society be notified of their protest.

J. F. THAXTON,
Secretary-Treasurer.

Norfolk County Medical Society.

The annual clinic of the Society was held on April 17, at which time the following program was given in the morning at St. Vincent's Hospital:

Report of an Interesting Case—Dr. A. A. Burke.
Pyloric Stenosis and Pylorospasm—Dr. Claiborne Willcox.

Planned Labor—Dr. C. J. Andrews.

Some Interesting Skin Cases Shown in Color Projections—

Drs. James W. Anderson and Raymond Kimbrough.
Operability, Morbidity and Mortality Factors in Carcinoma of the Colon—Dr. R. L. Payne.

Common Affections of the Hand—Dr. George A. Duncan.
Urinary Calculi—Dr. Russell S. Ferguson, Urologist to the Naval Hospital and Professor of Urology, Cornell University Medical School, New York.

Following luncheon, there were two sessions in the afternoon. The one at St. Vincent's included:

Epididymitis—Dr. Bryant E. Harrell.

Peptic Ulcers in the Elderly Patient—Dr. R. DuVal Jones.

Carcinoma of the Cervix—Dr. Julian L. Rawls.

Marked Trauma to the Small Intestine without Injury to the Abdominal Wall—Dr. C. Carroll Smith.

Resection of Head of Pancreas for Carcinoma—Dr. M. H. Todd.

Use of Vaginal Smears as a Guide to Therapy—Dr. E. Lowenberg.

Presentation of Cases—Dr. M. S. Fitchett.

Head Injuries—Dr. Benjamin A. Doggett.

At the Norfolk General Hospital, the following program was presented:

Eye Findings in Diabetes—Dr. Wm. Wickham Taylor.

Hemo-pneumo Thorax—Dr. Brock D. Jones.

Prothrombin Time in Cerebral Hemorrhage in Adults—
Dr. H. McGuire Doles.

Presentation of Cases—Dr. Frank H. Redwood

Presentation of Case—Dr. Wm. Arthur Porter.

The Use of the Sulfa-Drugs in General Practice with
Special Reference to Toxicity—Dr. Walter B. Martin.

Headaches Treated with Histamine—Drs. A. Brownley
Hodges and Beverley R. Kennon.

X-Ray Conference—Drs. Clayton W. Eley, K. K. Wallace, and Robert Williams.

Following this, an address was given in the Society's hall by Dr. Wyndham B. Blanton, Clinical

Professor of Medicine, Medical College of Virginia, and Editor of the VIRGINIA MEDICAL MONTHLY.

Dinner at Town Club brought to a close a most interesting program.

Speakers at other recent meetings of the Norfolk County Medical Society were:

Dr. Lloyd W. Ketron, associate professor of dermatology at Johns Hopkins University, whose subject was "Some General Observations on Dermatology";

Dr. Eugene P. Pendergrass of Philadelphia, who spoke on "The Roentgen Diagnosis of Intestinal Obstruction"; and

Drs. A. Brownley Hodges and Benj. A. Doggett of Norfolk, who presented papers on "Some Medical Problems in Thyroid Disease" and "Surgical Management of Goitre," respectively.

Patrick Henry Medical Society.

The regular quarterly meeting of this Society was held at the Broad Street Hotel, Martinsville, on April 18.

A new Constitution and By-Laws for the society was adopted, and delegates and alternates to the next meeting of the Medical Society of Virginia were elected.

The society approved plans for the establishment of a tuberculosis clinic for indigent patients in Henry County.

Mr. L. S. Macon of the Linde Air Products Company presented a moving picture on "Oxygen Therapy".

R. H. WALKER,
Secretary.

Richmond Academy of Medicine.

There was a symposium on "Peripheral Vascular Disease" at the meeting of the Academy on April 8, this being discussed as follows: "Pathology and Diagnosis" by Dr. E. L. Kellum; "Treatment" by Dr. Douglas G. Chapman; "Surgical Management" by Dr. H. J. Warthen; and "Varicose Veins and Ulcers" by Dr. Guy W. Horsley.

At the meeting on April 22, the following program was given: "Cantharides Poisoning" by Dr. John P. Lynch; "Lesions of the Proctoscopic Area" (illustrated) by Dr. W. W. Rixey; and "Mediastinal Emphysema and Spontaneous Pneumothorax" by Dr. M. M. Pinckney.

These meetings were followed by buffet suppers in the dining room of the Academy.

Dr. William B. Porter is this year's president.

Roanoke Academy of Medicine.

The regular monthly meeting of the Academy was held at Hotel Roanoke on April 7, with the president, Dr. K. D. Graves, presiding.

Dr. Robert A. Groff, Professor at Graduate Hospital, University of Pennsylvania, spoke on the subject "Brain Tumors, Diagnosis and Treatment."

Dr. LeRoy A. Schall, Professor of Otolaryngology, Harvard Medical School, Boston, Mass., spoke on "Malignancy: General considerations with Special Reference to the Nose and Throat."

Both of these papers were well illustrated with lantern slides and colored movies.

ALLEN BARKER,
Secretary-Treasurer,

Southwestern Virginia Medical Society.

The annual spring meeting of this Society was held in Pulaski on April 16th. The Society had the pleasure of hearing five guest speakers during the afternoon session, who presented a symposium on "Pain". Dr. I. A. Bigger, Dr. W. B. Porter, Dr. Finley Gayle, Dr. W. Gayle Crutchfield and Dr. Carrington Williams, all of Richmond, also spoke during the evening session.

The meeting was unusually successful with approximately one-half of the membership in attendance.

Between the afternoon and evening sessions, the Society was the guest of the physicians of Pulaski who entertained with a cocktail party at the Elks' Club.

During the evening session, Dr. B. P. Seward of Roanoke presented the guest speakers and Dr. W. R. Whitman also of Roanoke introduced the guest speaker of the evening, Dr. Walter B. Martin of Norfolk, President of the Medical Society of Virginia. Dr. Martin gave an interesting paper entitled: "The Use of Sulfanilamide Drugs by the General Practitioner With Special Reference to Toxic Reactions".

The following new members were received: Dr. A. G. Evans, Christiansburg; Dr. Thomas H. Kuhnert, Bristol; Dr. Joseph T. Graham, Draper; Dr. J. M. Rogers, Glade Springs; Dr. David S. Garner, Roanoke; Dr. Hal Davis, Roanoke; Dr. A.

G. Schnurman, Radford; Dr. J. F. Chairsell, Jr., Christiansburg; Dr. Heinz C. Meyer, Konnarock.

The Society voted to remit the dues of all members called to temporary military service. Dr. C. B. Bowyer, Councilor for the Ninth District, spoke to the Society, requesting the appointment of county representatives to cooperate with the Councilor and the Medical Society of Virginia. This was so ordered.

The next meeting will be held in September in Roanoke.

JAMES P. KING,
Secretary.

The South Piedmont Medical Society

Met in Danville on April 16, under the presidency of Dr. Wm. L. Eastlack of South Boston. At the business session, the following officers were elected: President, Dr. E. E. Barksdale, Danville; vice-presidents, Dr. E. G. Scott, Lynchburg, Dr. Walter McMann, Danville, and Dr. C. B. White, Halifax; and secretary-treasurer, Dr. F. O. Plunkett, Lynchburg (re-elected).

The scientific program was as follows: "Sulfona-

mid Drugs" by Dr. George Barksdale Craddock, Lynchburg; "Convulsions During Anesthesia" by Dr. S. Newman, Danville; "Spinal Anesthesia" by Dr. Brown H. Carpenter, Danville; "Management of Fractures of Forearm," by Dr. Prentice Kinser, Jr., Danville; "Diagnosis and Treatment of Ovarian Failure During the Reproductive Period" by Dr. E. C. Hamblen, Durham, N. C.; "Significance of Difficulty in Swallowing" by Dr. Porter P. Vinson, Richmond; "Treatment of Massive Pulmonary Collapse" by Dr. E. G. Scott, Lynchburg; "Recent Advances in Surgery of Stomach and Colon" by Drs. John W. Devine and John W. Devine, Jr., Lynchburg; "Medical Aspects of Pyelo-Nephritis" by Dr. H. W. Brownley, Lynchburg; "Treatment of Industrial Injuries" by Dr. I. K. Briggs, South Boston; and "A Study of Eighty-Three Cases Postpartum Sterilizations in the Lynchburg General Hospital During the Past Three Years" by Dr. F. O. Plunkett, Lynchburg. Supper at Hotel Burton followed the meeting.

The next meeting of the Society will be held in South Boston on November 19.

News Notes

Time to Make Reservations.

As time is at hand to plan for the coming meeting of the Medical Society of Virginia at Virginia Beach, October 6 to 8, we list hotels which will be open at the Beach at that time, and suggest that members make early reservations in view of the crowded conditions of hotels in that section:

THE CAVALIER (HEADQUARTERS HOTEL) — Special convention rates will be on the American Plan \$8.00 per person daily for twin bedded rooms with private bath, and \$9.00 daily for single rooms with private bath. These rates include without additional charge free parking, free golf on the Cavalier 18-hole championship golf course (golf at the Princess Anne Club, which is not owned by the hotel, will be \$2.00 per person daily), free swimming in the Cavalier's heated, salt water pool with free dressing rooms in the lower lobby of the hotel.

The banquet is included in the American

plan rate for those staying at the Cavalier and for those staying in other hotels the banquet charge will be \$2.00 per person. There will be no charge for tennis to the convention delegates, nor will there be any charge for archery, croquet, Gopher Golf, or Ping Pong.

THE GAY MANOR HOTEL—Adjoining the property of the Cavalier, will extend rates of \$5.00 per person for twin bedded rooms daily and \$6.00 for single rooms daily on the American plan and \$2.50 per person for double rooms and \$3.00 per person for single rooms on the European plan. The rates quoted above are for rooms with private bath or connecting bath.

THE PRINCESS ANNE COUNTRY CLUB—Offers the following rates for rooms with private bath on the American plan: \$7.50 per person daily for the double occupancy of rooms and \$8.50 for single rooms. For double rooms with shower bath between they offer rates of \$6.50 per person on the American plan and for single rooms

with shower bath between—\$7.50 per person. On the European plan they offer rates of \$4.00 per person for the double occupancy of rooms with private bath, \$5.00 for single rooms with private bath, \$3.00 per person for double rooms with shower bath between and \$4.00 for single rooms with connecting shower bath between.

Attention is called to the fact that members who wish to present papers at this meeting should have their titles with abstracts at the Society's office by June 1.

Several doctors have indicated that they will exhibit their hobbies at this time. This is a new feature and we hope members will assist in making it an attractive one.

Virginia Society of Oto-Laryngology and Ophthalmology.

The annual meeting of this Society will be held at the Richmond Academy of Medicine Building in Richmond, on Saturday, May 10, beginning at 9:30 a. m. Dr. E. T. Gatewood is chairman of the local committee in charge. The program includes papers by two guests—Dr. James Babbitt of Philadelphia, whose subject will be "Geriatrics and its Role in Otology," and Dr. Edwin B. Spaeth, also of Philadelphia, who will speak on "The Surgical Treatment of Neurofibroma of Orbit"—in addition to those by the following members: Drs. Mortimer H. Williams, George M. Maxwell and E. G. Gill of Roanoke, Dr. McGuire of Winchester, Dr. Gatewood of Richmond, Dr. C. M. McCoy of Norfolk, and Dr. F. H. McGovern of Danville.

Dr. G. G. Hankins of Newport News is president and Dr. Guy R. Fisher of Staunton secretary.

Southern Society of Clinical Surgeons.

The fifteenth annual meeting of this Society was held at the Medical School of the University of Virginia, Charlottesville, and at the Medical College of Virginia in Richmond, April 3-5, this being its first meeting in Virginia. Its membership is limited to fifty and eight of these are from Virginia: Drs. I. A. Bigger, R. H. Hoge (admitted this year), Harry J. Warthen and Carrington Williams of Richmond; Dr. R. DuVal Jones of Norfolk; and Drs. C. Bruce Morton, J. M. Nokes and Arthur M. Smith of Charlottesville.

An excellent scientific program was carried out under the presidency of Dr. J. S. Speed of Memphis,

and social features added to the pleasure of those attending. One action of the Society was to vote the erection of a bronze tablet at St. Elizabeth's Hospital, Richmond, in memory to Dr. John Shelton Horsley, Jr., a charter member and the first member to die in the Society's history.

Dr. C. Bruce Morton, of Charlottesville was elected president; Dr. Malcom D. Thompson of Louisville, Ky., vice-president; and Dr. William Perrin Nicolson of Atlanta was re-elected secretary-treasurer. St. Louis, Mo., was selected as the 1942 place of meeting.

American Medical Association.

The Official Call has been issued for the ninety-second annual meeting of the Association to be held in Cleveland, Ohio, from Monday, June 2nd to the 6th. The House of Delegates will convene on the 2nd. The Scientific Assembly will open with the general meeting on the 3rd at 8 P. M., and the various sections will begin on the 4th.

BOWLING

Plans are on foot to have a bowling tournament during the next meeting of the American Medical Association. It is hoped that teams can be formed representing various States. Physicians who are interested in bowling should contact Dr. Lewis W. Bremerman, 1709 West 8th Street, Los Angeles, California.

GOLFING

The American Medical Golfing Association's twenty-seventh annual Tournament will be held at Cleveland Country Club-Pepper Pike Club, Cleveland, Ohio, June 2. Two famous championship courses and a beautiful clubhouse await the nation's medical golfers in Cleveland on the occasion of the A.M.A. Convention.

Some 250 of the 1,413 Fellows of the A.M.G.A. are expected to take part in this 36-hole competition. Each contestant will play both courses. The sixty prizes, in the nine Events, will be distributed after the banquet at the Cleveland Country Clubhouse.

All members of the A.M.A. are eligible for Fellowship in the A.M.G.A. Write the Secretary, Bill Burns, 2020 Olds Tower, Lansing, Michigan, for registration application.

The Gill Memorial Eye, Ear and Throat Hospital

Has just completed its fifteenth Annual Spring Graduate Course, which was successful in every way,

with a total registration of seventy doctors. The following comprised the guest faculty:

Dr. Alfred Cowan, Philadelphia.
 Dr. Robert A. Groff, Philadelphia.
 Dr. James H. Maxwell, Ann Arbor, Mich.
 Dr. Paul M. Moore, Cleveland, Ohio.
 Dr. Raymond E. Meek, New York.
 Dr. C. Stewart Nash, Rochester, N. Y.
 Dr. A. B. Reese, New York.
 Dr. A. D. Ruedemann, Cleveland, Ohio.
 Dr. LeRoy A. Schall, Boston.
 Dr. C. R. Straatsma, New York.
 Dr. T. L. Terry, Boston.
 Dr. Arno T. Town, New York.
 Dr. Warren T. Vaughan, Richmond.
 Dr. Frank B. Walsh, Baltimore.

"Bundles for Britain."

As much as we individually might be in sympathy with the "Bundles for Britain" movement, one recent phase of it hardly has our approval.

At several points in the country there has been a movement to collect samples left by pharmaceutical detail men in physicians' offices and include them in the shipments for British Relief. This is an expensive and uncontrolled way of supplying pharmaceutical products, and many samples left physicians would be dangerous if used indiscriminately without the advice of a physician.

Most of the Pharmaceutical manufacturers have individually donated supplies with vitamin capsules and other needed pharmaceutical products to the British Relief at no charge. The packaging of these samples increases the cost and, if these samples are collected and sent to Britain, the purpose for which they were intended, that is, for the use of physicians, is not accomplished, and the heterogeneous material that reaches British Relief probably would have little value.

In some cases individual City and County Medical Societies have been asked to cooperate with the collection of these samples. It is believed that such cooperation should be refused for the obvious reasons stated.

Medical College of Virginia News.

The annual Stuart McGuire Lectures and Spring postgraduate clinics were held April 24 and 25. Dr. Alfred Blalock of Vanderbilt University gave the McGuire lectures, the first on Pathogenesis of Shock and the second on Prevention and Treatment of Shock. Speakers on the postgraduate clinic program

were: Dr. L. R. Broster, Senior Surgeon to Charing Cross Hospital, London, speaking on Recent Developments in the Treatment of War Wounds; Lieutenant Colonel David N. W. Grant, Chief Medical Division, United States Army Air Corps, Medical Division, Occupational Fatigue as Manifested in Flying Personnel; Dr. Henry K. Beecher, Chief, Department of Anesthesia, Massachusetts General Hospital, Clinical Aspects of Anesthesia and Shock; Dr. C. C. Coleman, Professor of Neurological Surgery of the college, Penetrating Wounds of the Brain, and Dr. Harry J. Warthen, Associate professor of Surgery, Gas Bacillus Infection.

Mr. George W. Bakeman, who has been in charge of the Paris office of the Rockefeller Foundation for a number of years, has been appointed Assistant to President Sanger.

The annual lectureship sponsored by Psi Omega dental fraternity will be given at the Simon Baruch Auditorium on May 5 by Dr. William J. Gies. Dr. Gies' topic will be Medicine and Dentistry in Health Service.

Dr. Alton D. Brashear, Assistant Professor of Anatomy, has been made a member of the supreme council of Psi Omega fraternity.

The ex-internes of the Hospital Division of the college held their annual reunion on April 23. The program for the reunion included clinical-pathological conferences as well as the postgraduate clinics and the McGuire Lecture program. A tour of the new hospital, a smoker, and a banquet concluded the day's activities.

Alpha Epsilon Iota, women's medical fraternity, sponsored a lectureship on April 18 by Dr. Josephine Neal, Clinical Professor of Neurology of the College of Physicians and Surgeons, Columbia University. Dr. Neal spoke on Acute Encephalitis with Special Reference to Infectious Diseases.

On April 3 the college was host to the fifteenth annual convention of the Southern Society of Clinical Surgeons. Following operative clinics in the morning the group made a trip to Williamsburg in the afternoon. Dr. Randolph H. Hoge, Assistant Professor of Anatomy and Surgery at the college, was elected to membership in the Society at its meeting here.

Dr. H. Hudnall Ware, Jr., Associate Professor of Obstetrics, recently addressed the Fredericksburg Medical Society on Ectopic Pregnancy.

The College will act as host to the Virginia Academy of Science May 1-2-3 for its annual meeting. A splendid program has been arranged for the occasion.

The Society of Neurological Surgeons will also meet at the college May 1-2-3 for operative clinics and program of lectures.

News from University of Virginia, Department of Medicine.

On March 21, Dr. John M. Meredith participated in the Post-Graduate Course in Medicine and Surgery for the Elizabeth City County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Surgical Aspects of Sciatica. On April 4, Dr. Robert V. Funsten presented a lecture before this Society on Simplified Treatment of Certain Fractures, and on April 11, Dr. William H. Parker, spoke on Carcinoma of the Cervix.

On March 22, Dr. Fletcher D. Woodward addressed the Faculty and Medical Students of the University of Texas Medical College in Galveston. His subject was Diseases of the Esophagus.

The Phi Lambda Kappa Lecture was given on March 31, by Dr. Samuel Loewenberg, Professor of Medicine at the Jefferson Medical College of Philadelphia. He discussed Endocrinopathies.

At the meeting of the Alleghany-Bath and Greenbrier Valley Medical Society at White Sulphur Springs on April 3, Dr. Henry B. Mulholland spoke on The Modern Conception of the Treatment of Diabetes.

On April 3, the Southern Society of Clinical Surgeons spent the first day of their three-day annual meeting at the University of Virginia. After the operative clinic the following dry clinic was presented in the forenoon: Thrombophlebitis in a Sympathectomized Limb by Dr. Edwin P. Lehman; Total Gastrectomy—Three Successful Cases by Dr. C. B. Morton; Chest Tumor by Dr. E. C. Drash; Appendix Abscess—Conservative Treatment by Dr. W. H. Parker; Multiple Stones in Common Bile Duct by

Dr. W. R. Hill; Annular Pancreas by Dr. E. P. Lehman; Non-Rotation of Colon—Operative Rotation by Dr. C. B. Morton; Actinomycosis of the Stomach by Dr. W. H. Parker, and Developmental Anomalies by Dr. H. E. Jordan. The morning program included also a paper by Drs. E. P. Lehman and Floyd Boys on Experiments with Heparin and one by Dr. S. W. Britton on The Influence of Extracts of the Pituitary Gland and Adrenal Cortex on Water Balance. At the afternoon session the following program was presented: Dr. Alfred Chanutin spoke on Studies on Calcium Metabolism with the Aid of the Ultra-centrifuge; Drs. G. M. Lawson and E. P. Lehman presented a paper on Clinical Experience with Sulfanilylguanidine; Dr. E. M. Landis discussed Pressor Activity of Extracts of Human Kidney in Relationship to Hypertension; Dr. W. W. Waddell, Jr. spoke on Clinical Studies on Vitamin K; and Dr. G. C. Ham discussed Studies on Anti-diuretic Substances in the Urine of Patients with Toxemias of Pregnancy. The meeting was continued at the Medical College of Virginia in Richmond on April 4, and 5.

The twenty-seventh Post-Graduate Clinic sponsored by the University of Virginia Medical School and the Division of Extension was held on April 11. The following program was presented: Sulfonamide Compounds in Medicine by Dr. J. E. Beckwith; Sulfonamide Compounds in Surgery by Dr. W. H. Parker; Fluid Balance by Dr. Staige D. Blackford; Administration of Fluids by Dr. W. R. Hill; Digitalis Therapy by Dr. J. Edwin Wood, Jr. and Dr. John Hortenstine; Diuretics by Dr. E. M. Landis; Treatment of Deficiency States by Dr. H. B. Mulholland; Treatment of Anemias by Dr. Byrd Leavell; The Female Sex Hormones by Dr. Tiffany J. Williams; and The Male Sex Hormones by Dr. Samuel Vest. Eighty-two physicians attended the Clinic.

The third Alpha Omega Alpha Lecture was presented on April 11, by Dr. Homer W. Smith, Professor of physiology at the New York University College of Medicine. Dr. Smith spoke on the subject, The Quantitative Study of Renal Function.

Congratulations to Dr. Griffith!

Dr. R. S. Griffith of Waynesboro on April 16, celebrated his eightieth birthday and yet is as hale and hearty as many men much younger in years.

A native of Maryland, he came to Virginia in 1891, locating at Basic City (now included in Waynesboro), and has practiced his profession there continuously for the past fifty years. May he enjoy many more birthdays!

The West Virginia State Medical Association

Is holding its annual meeting in Charleston, May 12, 13 and 14, under the presidency of Dr. Robert King Buford of that city. There are a number of guest speakers on the program which includes many interesting subjects. Mr. Joe W. Savage of Charleston is executive secretary.

The Medical Society of the State of North Carolina.

The annual meeting of this Society will be at Pinehurst, May 19 - 21, with headquarters at the Carolina Hotel—always a popular meeting place. Dr. Hubert B. Haywood of Raleigh is president and Dr. I. M. Manning of Chapel Hill is secretary.

Dr. Emily Gardner

Has been appointed chairman of the medical committee of the Richmond Tuberculosis Association. Serving with her are Drs. D. D. Talley, S. A. Anderson, Jr., Kinloch Nelson, A. S. Hurt, Jr., T. Dewey Davis, C. L. Outland, M. M. Pinckey, and W. E. Chaplin.

The Greenbrier Interstate Medical and Surgical Society

Held its third annual spring meeting at The Greenbrier Hotel, White Sulphur Springs, W. Va., on April 3rd, with Dr. Herbert Duncan of Lewisburg, W. Va., president, presiding. About fifty were present including members of the Greenbrier Valley Medical Association of West Virginia and the Alleghany-Bath Medical Society of Virginia.

Dr. J. M. Emmett of Clifton Forge arranged the program. Those taking part were Dr. H. B. Mulholland, Professor of Medicine of the University of Virginia, who presented a paper entitled, "Modern Concepts in the Treatment of Diabetes Mellitus", illustrated with lantern slides.

A paper on "Pneumonia" was presented by Dr. Dean Cole of Richmond, and included a discussion of the relative merits of sulphapyridine and sulphathiazole in treatment. Dr. J. Morrison Hutcheson of Richmond, Clinical Professor of Medicine of the Medical College of Virginia, discussed "Acute Spon-

aneous Pneumothorax Simulating Coronary Thrombosis". He gave the history of several cases where these two conditions were the subject of a mistaken diagnosis.

The Society meets annually at White Sulphur Springs, and there are no dues and no special officers except those of the respective County Medical Societies.

A collation was served by the courtesy of the Greenbrier and Dr. Guy Hinsdale, Medical Director.

Lederle Adds Cerevim to List of Council Accepted Products.

Most recent addition to the Lederle line of ethical pharmaceuticals and biologicals is Cerevim, an advanced cereal formula for babies and infants, formerly distributed by the Cerevim Products Corporation. In announcing the addition of this established product to their line, Lederle Laboratories emphasize that they will continue to follow their own policy of detailing physicians and selling through retail druggists only—which is the same basis on which substantial sales for Cerevim have been established already.

Cerevim is Council-Accepted and has the full endorsement of the Council on Foods of the American Medical Association.

The American Association for the Study of Goiter

Will hold its annual meeting in the Hotel Statler, Boston, Mass., May 12, 13 and 14, 1941, instead of the date originally announced.

The program for the three day meeting will consist of papers dealing with goiter and other diseases of the thyroid gland, dry clinics and demonstrations.

Dr. R. B. Turnbull,

Formerly of Blue Ridge Sanatorium, Charlottesville, is now associated with Pinecrest Sanitarium at Beckley, W. Va.

Dr. John D. Thomas,

Washington, D. C., for many years a member of the Medical Society of Virginia, announces the removal of his office and residence to the Parkwood, 1746 K Street, Northwest, that city.

The Society of Neurological Surgeons

Will meet in Richmond on May 1, 2 and 3, with headquarters at the Hotel John Marshall. This Society was organized in 1921, largely through the

efforts of Dr. Harvey Cushing and Dr. Charles H. Frazier. The scientific program has been arranged by the Virginia member of the Society, Dr. Claude C. Coleman. All scientific meetings will be held at the Medical College of Virginia Hospital. Operative Clinics are scheduled for the mornings of May 1 and 2, by the Neuro-surgical Staff of the Medical College of Virginia. On May 3, the members of the Society, the wives and guests will visit Williamsburg, Yorktown and Jamestown.

Dr. Howard Fleming, of San Francisco, is the president of the Society and Dr. Winchell Craig, of the Mayo Clinic, is secretary. Important medical teaching centers of the United States and Canada will be represented in the attendance.

Return from Florida.

Dr. E. F. Younger, who has been spending the winter season at St. Petersburg, Fla., has returned to his home in Lynchburg.

Dr. D. Hunter Marrow, after a winter spent at Daytona Beach, Fla., has returned to Boynton, as usual.

Dr. T. Neill Barnett

Richmond, will be among those taking part in the round table conference on "Sigmoidoscopy," at the annual meeting of the National Gastroenterological Association, in New York on May 13-16.

Dr. W. H. Parker

Has returned to the University of Virginia Hospital, Charlottesville, after some time spent at Memorial Hospital, New York City.

Dr. Edgar A. Pole

Has returned to Hot Springs, after some time spent in Charlottesville.

Dr. E. G. Gill

Of Roanoke delivered an address by invitation at the New York Eye and Ear Infirmary as of their guest speakers for their annual Post Graduate Program on March 29. His subject was "Management of Foreign Bodies in the Air and Food Passages," and this was illustrated with lantern slides and motion pictures.

Dr. R. E. Booker,

Lottsburg, has been elected a member of the board of directors of the Northumberland Rotarians, for the coming year.

Dr. Mason Romaine

Has been appointed by the city Council of Petersburg as full time health officer of that city, and will enter upon this work about May 1. Dr. Romaine has been serving in this capacity on a part time basis for some time.

Dr. Lee S. Liggan,

Irvington, has been elected vice-president of the Kilmarnock-Irvington-White Stone Rotary Club.

Married.

Dr. Charles Robins, Jr., and Miss Susan Clay, both of Richmond, April 19.

Dr. David H. Rosenfeld, Richmond, and Miss Ruth Alyce Keren, Washington, D. C., March 30.

Changes in Personnel of State Department of Health.

Dr. James M. Suter, Health Officer of Bristol-Washington County Health Department, has been called to military duty.

Dr. C. L. Savage resigned from the Hanover County Health Department in April. Dr. J. D. Hamner, formerly Health Officer of Southampton County, has been transferred to Hanover.

Dr. Hubert D. Crow, formerly assistant Health Officer of Brunswick-Greenville-Mecklenberg Health District, has been transferred to Southampton County.

Wanted—

Physician. Preferably young man who has had some experience in psychiatry of who wishes to enter this field; to associate in psychiatric work at nervous and mental private hospital. An attractive position with opportunity if he succeeds in the work. Address "BXY," care of this JOURNAL. (*Adv.*)

Obituary Record

Dr. George Johnson Tompkins,

Prominent physician of Lynchburg, died April 2, following a heart attack. He was born in Lexington in 1873 and graduated from the Medical College of Virginia in 1894. Dr. Tompkins had practiced in Lynchburg since 1899, specializing in diseases of the eye, ear, nose and throat. He was very active in medical and religious affairs of his city. Dr. Tompkins had been a member of the Medical Society of Virginia for forty-seven years, during which time

he had served as a vice-president and a member of the Council. His wife and five children survive him. A brother is Dr. E. Pendleton Tompkins of Lexington.

Dr. Harry Barton Hinchman,

Well known physician of Richmond, died following a heart attack on April 7. He was fifty-one years of age and a graduate of the Medical College of Virginia in 1916. Dr. Hinchman was a member of the Richmond Kiwanis Club, the Knights of Columbus, and several other social and fraternal organizations. He had been a member of the Medical Society of Virginia since 1925. His wife, a sister and three brothers survive him. Two brothers are Drs. J. Doherty and F. Ernest Hinchman, both of Richmond.

Dr. Richard H. Peake.

As it must come sometime to all men, death came on March 6, 1941, to Dr. Richard H. Peake, long a prominent and influential physician of Norfolk, Virginia.

Dr. Peake left behind a lengthy list of good works and accomplishments. For a number of years, he was chief of a gynecological service at the Norfolk General Hospital. It was here that his professional ability was greatly manifested to the indigent. The crowning glory of his career, however, was his tireless and persistent championship of the younger physician, of whose problems, both in and out of the profession, he was ever mindful.

Dr. Peake was born in 1890. He was the son of Captain James G. Peake, Sr., and the late Mrs. Nellie Bew Peake. He received his medical degree in 1915 from the Medical College of Virginia. During the summers of 1912, '13 and '14, he served externships at the Norfolk Protestant Hospital. In 1915 and '16 he served an internship at the same hospital. He was made President of the Medical Staff of the same institution (now the Norfolk General Hospital) in 1935 and was a member of the Executive Medical Board during 1935, '36 and '37.

For years Dr. Peake had not been strong, but he remained actively in practice until twenty-one months prior to his death.

Of our beloved deceased colleague, be it

RESOLVED:

That we, the Medical Staff of the Norfolk General Hospital, regret the death of our friend and associate.

That, this Staff will miss his good advice and sound judgment.

That, we have lost not only a beloved colleague, but a sincere friend.

That a copy of these resolutions be placed upon the Permanent Minutes of the Norfolk General Hospital, a copy be sent to the VIRGINIA MEDICAL MONTHLY, and to Dr. Peake's family.

A. B. HODGES

N. F. RODMAN

K. K. WALLACE

Resolutions on Dr. John Wyatt Davis, Sr.

"In the midst of life we are in death." Ever and anon this melancholy truth is borne in upon us. Today, we of the Lynchburg Academy of Medicine, in the midst of life, pause to pay tribute to the character and memory of a fellow member who, on February 27, 1941, passed to life eternal, Dr. John Wyatt Davis, Sr.

Dr. Davis was one of the older physicians of this city, having begun the practice of medicine forty-two years ago in Richmond, Virginia. Then followed a period of four years at Rustburg, during which time he married, and, finally, thirty-five years ago he located in Lynchburg where by faithful industry he established himself and built up a large private practice.

When the United States entered the World War he enlisted in the Navy, was sent first to St. Helena Training Station and later assigned to the Atlantic Transport Service, accompanying The American Expeditionary Forces to France. In 1919 he was honorably discharged from the Navy and the following year went as Medical Officer with a regiment of Marines to the West Indies. In 1922 he returned to Lynchburg and has since been in continuous practice here.

Dr. Davis was a member of a number of medical organizations, National and State and served one term as president of the Lynchburg Academy of Medicine and also in other elective offices in local medical circles, all of which profited by his wise and faithful administration.

He was known amongst us for his diligent attention to his work, his unfailing courtesy and his personal charm expressed in the manner of a typical Virginia gentleman. Wholly without ostentation he gave generously of his time and often of his purse to the sick and needy.

As we review this brief sketch of the life of John Wyatt Davis, we are moved as follows:

BE IT RESOLVED, that the Lynchburg Academy of Medicine, Inc., in regular session assembled, hereby records its sorrow in the death of this fellow member, and that this resolution be spread on the minutes of the Society and a copy be sent to his family and to the VIRGINIA MEDICAL MONTHLY.

GEO. J. TOMPKINS, *Chairman*

ROBERT M. TALIAFERRO

H. P. BROWN

Dr. Benjamin Franklin Babb,

Ivor, died March 31, after a short illness. He was seventy-seven years of age and graduated from the Department of Medicine, University of Maryland, in 1892. His wife and seven children survive him.



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Are the Neuritic Symptoms of Pregnancy *due to a deficiency* of vitamin B₁ (thiamine) ?

SUCH common neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and (less frequent but more serious) paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Although neuronitis of pregnancy has long been considered a toxemia, no toxins have ever been identified.

Clinical observations of Strauss and McDonald lead to the conclusion that the condition is a dietary deficiency disorder similar to beriberi, caused by lack of vitamin B₁. They report recovery in their cases receiving this therapy, including dried brewers' yeast.

Hyperemesis as Cause of Avitaminosis

Wechsler observes that all cases of polyneuritis of pregnancy recorded in the literature were preceded by long periods of severe vomiting. "It would seem," he adds, "that because of actual starvation these patients suffered from avitaminosis and consequent neuritis," a view likewise held by Hirst, Luikart, and Gustafson. Plass and Mengert observe that the practice of giving high carbohydrate feedings for hyperemesis gravidarum is still more likely to cause avitaminosis.

Dried brewers' yeast, as it is far richer than any other food in vitamin B₁ (thiamine), is being used with benefit both in the prevention and treatment of polyneuritic symptoms of pregnancy. Lewy found that additions of yeast to the diet reduced electric irritability of the peripheral nerves and brought clinical improvement. Vorhaus states that he and his associates, after administering large amounts of vitamin B₁ (thiamine) to 250 patients having various types of neuritis, including that of pregnancy, observed in about 90% of cases "varying degrees of improvement, i.e., from partial relief of pain to complete disappearance of all symptoms."

Need for Vitamin B₁ (thiamine) in Lactation

Evans and Burr, Hartwell, Sure and co-workers, and Macy *et al* are among numerous authorities who find that the nursing mother also needs a supplement of vitamin B₁ (thiamine) from 3 to 5 times the normal requirement. It is accepted that during pregnancy and lactation the requirement for vitamin G (riboflavin) is increased.



Consisting of nonviable yeast, Mead's Brewers Yeast Tablets offer not less than 50 International vitamin B₁ (thiamine) units and 50 Sherman vitamin G (riboflavin) units per gram (20 International units of vitamin B₁ and 20 Sherman units of vitamin G per tablet).

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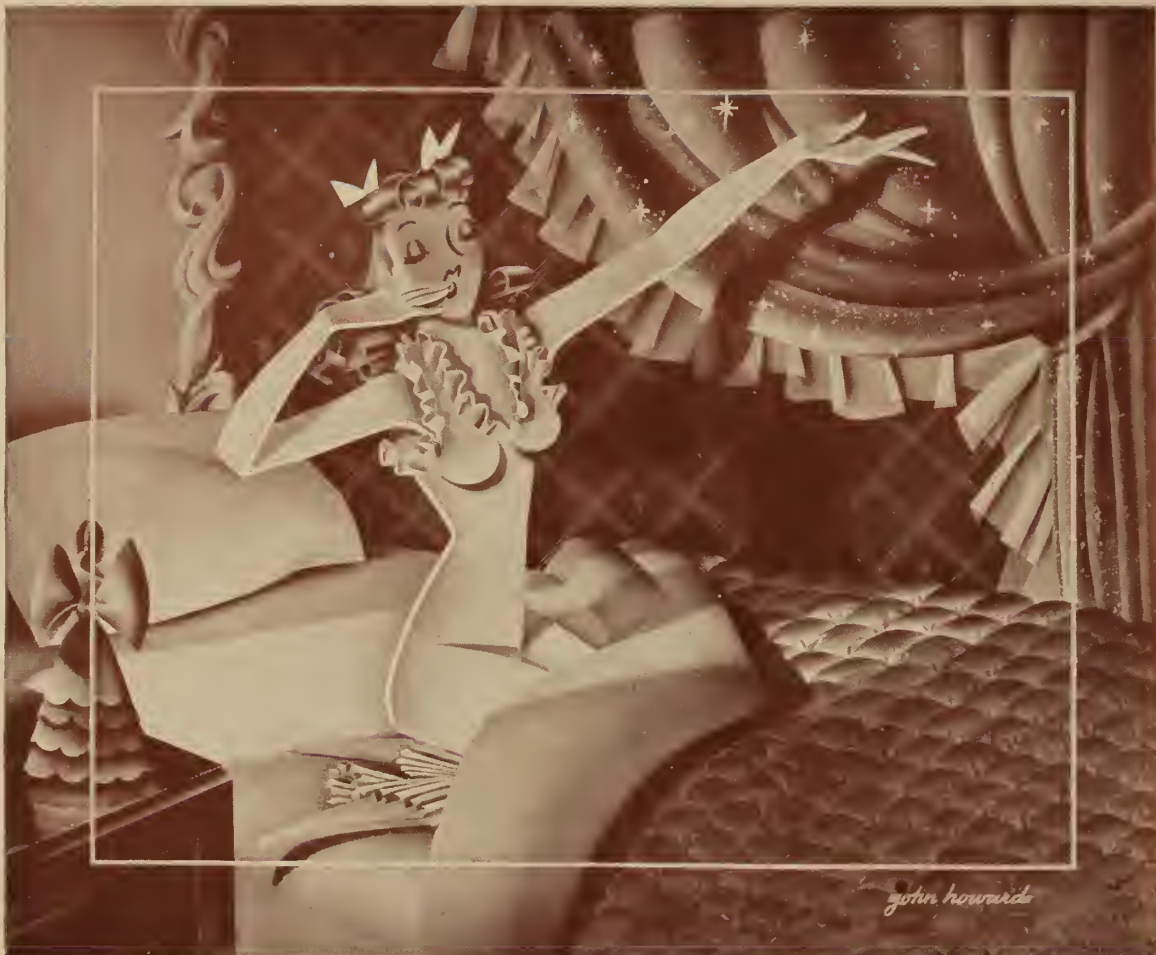
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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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RICHMOND, VA., JUNE, 1941

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A POLLEN SURVEY OF THE ISLANDS OF BERMUDA.

LESLIE N. GAY, M.D.,

HARRY CURTIS, M.D.,

and

THEODORE NORRIS, PH.B.,

Baltimore, Maryland.

From the Protein Clinic, Department of Medicine, The Johns Hopkins Medical School and Hospital, and the Department of Botany, The Johns Hopkins University*.

A haven of refuge for hay-fever and pollen asthma sufferers has long been sought. New Hampshire is no longer satisfactory because offending grasses and ragweeds have invaded its seclusion. Northern Michigan and Southern California are comparatively free of ragweed pollen, but have other complicating factors.

The Islands of Bermuda were chosen for a survey of the pollen flora of the atmosphere because of their popularity with and their accessibility to the citizens of the United States. These islands are nearer New York than they are to the West Indies group. The exact location is 32 degrees, 14' north latitude and 64 degrees, 49' west longitude. The same latitude line passes through Charleston, South Carolina on the West and through the Madeira Islands and Jerusalem on the East. New York is 666 miles away.

In conjunction with their accessibility and popularity the Bermudas are a group of small islands exposed to ocean winds. It is recognized that prevailing winds from the ocean cleanse the atmosphere and lessen the influence of pollen on the mucous membranes of a sensitive individual.

The island group is slightly over nineteen square miles in size, fifteen miles long and three miles wide; the average width is somewhat less than one and a half miles. Originally Bermuda was a volcanic submarine mountain. The sea receded, the coral rock built up, and layers of earth have been deposited. The average depth of soil is estimated to be six inches.

The temperature of the islands varies but little.

*Bulletin of Johns Hopkins Hospital, Vol. LXVIII, No. 2, pp. 179-189, February, 1941.

The mean temperature ranges in the winter months from 70 to 80 degrees.

The climate is mild, but damper than that of other places of the same latitude. The changes of wind are frequent and regular and are followed by hygrometric fluctuations.

This climate produces subtropical or warm temperature vegetation. Spring is the blossoming season for most annuals, but there are literally blossoms in every garden every month of the year. Roses, for example, bloom from October to July. The variety of trees is limited. No garden, however, exists without the native cedar (*Juniperus Bermudiana*).

With all of this profuse growth it is remarkable that only 8.7 per cent of the plant life is endemic. The large proportion has entered by natural agencies from America and the West Indies.

The survey which is reported was commenced March 1, 1939, and was concluded April 1, 1940. A single year was deemed sufficient for the survey, because the pollen cycle is considered regular with fluctuations due to seasonal variations only.

A standard microscope slide, lightly smeared with vaseline, was exposed for twenty-four hours on a relatively exposed elevation at the same station in Hamilton, Bermuda. The slide, which was replaced every day at the same time was protected from rain and excess precipitating dust by a metal shelter, open on four sides. The metal roof of the shelter did not interfere with the pollen which was caught on the slide as air borne pollen travels horizontally with the air currents.

The collected slide was stained with Calberla solution to aid in differentiating the pollen grains. A

cover slip was placed on it. The exposed slide was then superimposed on a slide carefully calibrated in mm. and one square cm. was counted.

The pollen was identified by comparing unknown with known types and by reference to the keys to pollen identification by Wodehouse and by Moore and LaGarde.

In order that this survey might be compared with surveys made by other investigators throughout the United States, the succession of species was divided into the usual four seasons; namely, the tree season, the grass season, the plantain season and the ragweed season.

The tree season includes only the cedars and the candleberry myrtle. No other pollen grains were found on the slides in the tree season.

Cedar pollen was found on slides exposed during all but three months of the year—September, October and November. The peak of pollination was confined to the first three weeks in March. The cedar pollen on the slides in late spring and early summer was probably not due to continued flowering, but to the sifting of old dry pollen from the soil and other vegetation.

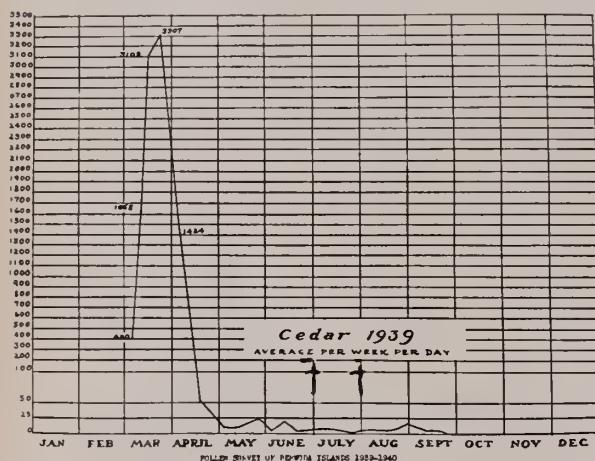


Figure 1.

The candleberry myrtle (*Myrica cecifera*) began to pollenate during the first week of March and was inactive by the first week of April. Thus far no case of clinical sensitivity to it has been brought to our attention.

The grass season began in May and terminated in early September. It had slight influence on the pollen content of Bermuda's atmosphere. There is an

abundance of poorly nourished grass, but the prevailing winds, the proximity of land and sea account for the lack of pollen. There was at no time sufficient concentration of pollen in the atmosphere to precipitate respiratory symptoms. Clinical observations confirm the opinion that grass pollen hay-fever is unknown or of no significance in Bermuda.

The plantain season was similar to that of the grasses. This pollen is a major factor in the cause of hay-fever in the spring in the United States. In Bermuda the count was so meagre that not even during the peak in October was there sufficient concentration to disturb sensitive patients.

There is no ragweed season in Bermuda. No ragweed pollen was found on any of the slides and no specimens of ragweed have been found on the islands. Bermuda is a safe haven for the ragweed sensitive patient.

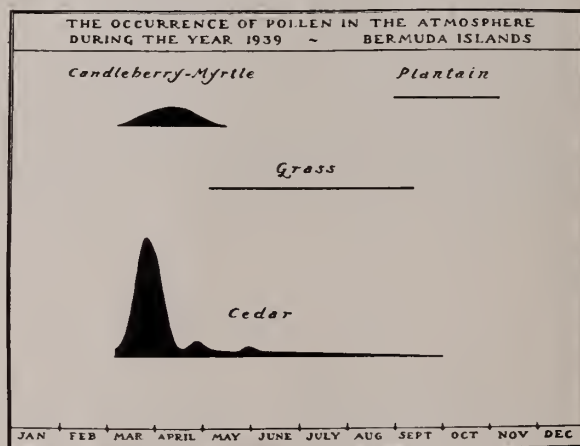


Figure 2.

An attempt was made to establish some criteria for predicting pollination dates from weather reports. No evidence of correlation was found in the data on hand.

There is available, therefore, within easy travel distance of the United States a very satisfactory group of islands which has a constant year round atmosphere entirely free of the usual disturbing pollens of grasses, plantain and ragweed. Only in late February and March is there sufficient concentration of pollen to cause distress to sensitive patients. And the only sources of this pollen are two trees—the candleberry myrtle and the cedar. In the United States the number of cedar pollen patients is relatively small. To our knowledge no clinical survey

has ever been made of the native inhabitants of Bermuda with reference to cedar pollen sensitiveness, nor for the prevalence of hay-fever and asthma. At

some future date this problem will be further elaborated.

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MEDIASTINAL EMPHYSEMA AND IDIOPATHIC SPONTANEOUS PNEUMOTHORAX.

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Severe pain in the chest, often accompanied by dyspnea or at least the realization that breathing requires effort and is no longer an automatic phenomenon, and occasionally followed by cyanosis and profuse perspiration, lead the sufferer's attending physician to suspect a cardiac calamity; sudden knife-like pains in the abdomen, together with nausea and vomiting, and accompanied by spasm of the upper abdominal musculature and leukocytosis, strongly suggest an abdominal lesion requiring prompt surgical treatment. Yet both of these distressful conditions might, and sometimes do, result from abnormalities not of the heart or digestive system, but of the mediastinal and pleural structures. Emphysema of the mediastinum, a collection of air in the mediastinal tissues, may by pressure upon adjacent cardiac and pulmonary organs and vessels simulate exactly the clinical picture of coronary thrombosis, or by the conduction of referred sensation may mimic the rupture or strangulation of an abdominal viscus.

Mediastinal emphysema and spontaneous pneumothorax are considered jointly in this paper, for the former may produce the latter, and both are often, but not always, associated. Our consciousness of the existence of mediastinal emphysema as a disease entity has been stimulated in the past few years, principally by the keen diagnostic skill of Dr. Louis Hamman,^{1,2} of Johns Hopkins Hospital, and our awareness of the frequency of spontaneous pneumothorax in healthy persons has been greatly increased by the reports of Dr. Staige Blackford,³ of the University of Virginia, and others.

The etiology of mediastinal emphysema is not proven, but Dr. Hamman's original observations upon humans link pulmonary interstitial emphysema and mediastinal emphysema. C. C. Macklin's⁴ experiments upon animals seem to confirm Dr. Hamman's hypothesis. Briefly stated, the course of events

is as follows:* because of a rupture or tear in the wall of an alveolus of the lung, air seeps into the alveolar connective tissue spaces and travels along the sheaths of the pulmonic blood vessels to produce interstitial emphysema. Thence the air dissects into the mediastinum. As the volume of air trapped in the mediastinal tissues increases, the air pressure is raised until a break through occurs at some point. Leakage may occur posteriorly into the retroperitoneal spaces, or upward into the neck and arms. In the type under discussion tonight, the air is displaced in a forward direction to infiltrate the areas between the parietal pleura and the pericardium. Thus blebs are formed overlying the heart, a condition known as pneumoprecordium. Additional compression of air, dammed behind the sternum and encircled by the heavy masses of the cardio-respiratory system, forces a rupture of the mediastinal wall into the pleural cavity, in effect to relieve the tension. Collapse of the lung follows, preventing further leakage into the vascular sheaths.

However, air may enter the pleural cavity to produce spontaneous pneumothorax by pathways other than the mediastinal route. Rupture of an air-containing vesicle occurs, allowing air to escape into the pleural space.⁵⁻⁹ This peripherally placed vesicle may rupture (1) because of a congenital weakness, (2) because of a fibrous valvular obliteration of smaller bronchi, or (3) because of a localized emphysema. An ingenious explanation¹⁰ suggests that the continuous wear and tear on the pleural surfaces due to sliding friction of respiratory movements produce a constant shedding and regeneration of tissue cells, and that an area weakened by imperfect regeneration will be the site of rupture.

By roentgen ray examination following the re-expansion of the collapsed lung in five cases, Gordon⁹ has discovered the site of ruptured subpleural

*Paraphrased from Hamman and Macklin.

blebs or bullae. A ruptured pleural bleb has been found at autopsy in one case reported by Kirshner,¹¹ and in another by Willcox and Foster-Carter.⁸ In six cases at autopsy, Kjaergaard (quoted by Blackford³) found the cause of the spontaneous pneumothorax was "ruptured superficial air vesicles at the apices of otherwise healthy lungs."

The pathological physiology engendered by the escape of air into the relatively fixed spaces of the mediastinum follows logically. Rupture of an alveolus or a bleb underlying the visceral pleura produces discomfort located usually in the lateral chest wall. Tunnelling of air into the mediastinum increases the intramediastinal pressure, compressing the large vessels and sometimes the coronary arteries, or even tamponading the heart itself. Thus the shock symptoms simulating an attack of coronary thrombosis. Escape of air into the retroperitoneal spaces or reflex stimulation of viscerosensitive nerves mimic the findings of an abdominal catastrophe. The greater the mediastinal air pressure, the greater the substernal pain, often agonizing in intensity. This substernal pain is caused by the mediastinal distention, while the lateral chest wall pain is caused by the alveolar rupture or interstitial pulmonic emphysema.

Respiratory distress naturally follows collapse of the lung, varying with the rapidity and amount of collapse and with the amount of mediastinal displacement. In experimental pneumothorax in healthy animals, Cole²¹ records that the vital capacity of the animal is the greatest determining factor in relation to the amount of air in the pleura needed to produce respiratory distress. Also that the velocity with which air is introduced into a pleural space, and not the amount, will be the deciding factor of rupture of the mediastinum and consequent production of bilateral pneumothorax.

The occurrence rate of spontaneous pneumothorax and mediastinal emphysema is unknown. The former occurs far more frequently than the latter is diagnosed. Since Hall's¹² first account of spontaneous pneumothorax in the healthy in 1887, few cases were reported until the past decade. In 1939 and 1940, however, Blackford,³ at the University of Virginia, reported 15 cases among healthy college students, giving an incidence rate of 1 per 1000 students per session. Norris⁶ reported 25 cases; Van Ordstand,¹³ 10 cases; and Perry,⁵ 85 cases. In addition, scattered reports of 1 to 3 cases appeared.¹⁴⁻²⁰

The condition appears most frequently in young

men, though ages range from childhood to the sixth decade, and women are also affected. Recurrence has been noted in 4.4 per cent of one series.⁵

The onset of an attack of mediastinal emphysema or spontaneous pneumothorax is usually sudden, but may be delayed. The symptoms vary in intensity from mild to terrifying; the attack may even prove immediately fatal. Therefore, in a patient with an acute tension pneumothorax, diagnosis and treatment must be hurried. In over one-half of one series of cases the presenting symptoms occurred during exertion;¹³ in another larger series the onset was seldom associated with exertion,⁶ some patients being awakened during sleep by the pain.

A mild case may offer no complaints other than a slight pain in the chest and some difficulty in breathing. A severe attack, on the other hand, may prostrate a patient with unbearable knife-like or compressing pains, dyspnea, faintness and sweating; or in the abdominal form with pain, nausea, and vomiting. Differentiation may sometimes be made between two types of pain—one, a relatively mild pain in the chest wall due to pleural or pulmonary tearing, which may precede by several hours the intense constricting and sharp pain behind the sternum due to mediastinal distention with air.

Physical examination may, depending upon the amount and location of air present, demonstrate signs consistent with air in a pleural cavity, and also diminution in the area of cardiac dullness, with fading of heart sounds. Hamman has described an amazing sound heard at the precordial area, synchronous with the heart beat, described as a "crunching, churning" sound, audible often to the patient and even to persons distant many feet from the patient. This distinctive sound is not that of a friction rub, but is due to the crunching of air-distended tissues ground between the heart and the anterior chest wall. The sound usually disappears when the patient lies on his back, and can be made to reappear by leaning forward and to the left. Invariably the patient has noticed this noise before being examined by the physician. In the two cases which I wish to report, both patients were at first greatly alarmed by this sound, one believing that his heart was about to burst.

In many instances no other physical abnormalities are noted. However, abnormalities of temperature, pulse, blood pressure, and blood counts have been recorded, varying from 99° to 103°, from 120 to 160

beats per minute, a low blood pressure of 60 to 80 systolic²², and leukocytosis up to 18,000. Confusion of the true diagnosis with acute abdominal pathology,^{18,23} coronary thrombosis,¹³ etc., may thus be created.

Roentgen ray examination is naturally most helpful. Air in the mediastinal areas or in the pleural cavities, found often only after expiration,⁶ is of course diagnostic. Unfortunately for the ease of diagnosis, subcutaneous emphysema is seldom present.

Treatment of the benign case is simple—rest in bed for one or two weeks. For the tense case with great dyspnea, immediate relief of intrapleural pressure must be effected by introducing a needle into the cavity and withdrawing 500 c.c. or more of air.²³ For recurrent cases, the production of a chemical pleuritis has been advocated, intrapleural injections of iodized oil,²⁴ concentrated dextrose,¹⁷ or gomenol in petrolatum²⁵ having been used successfully.

CASE REPORTS

Case 1.—A well developed, well nourished and athletic young woman, age 24, experienced pneumothorax on six occasions.

First attack: In January, 1937, while enjoying perfect health, she leaned over to pick up a letter on the floor and felt a sudden knife-like pain in the upper part of her back on the left side. The pain prevented her straightening up and was made worse if she took a deep breath. She felt that she was unable to fill her lungs completely with air. This pain gradually subsided so that she was without discomfort within thirty minutes, but the pain could be made to reappear by deep inspiration or by a sudden movement of her body in any direction. When lying down in bed that night, the pain reappeared, penetrating from the back to the precordial region. The pain was greatly increased by adhesive strapping applied to the chest as in the treatment of pleurisy. X-ray the following morning showed complete collapse of the left lung. At the end of four weeks the lung had re-expanded.

Second attack: In January, 1938, being tired after a head cold, she felt a mild pain in the left chest. Upon leaning forward, she could feel a "weight" shifting in her chest, increasing the pain and producing slight dyspnea. Again X-ray showed a complete collapse, and the lung re-expanded in fourteen weeks.

Third attack: In December, 1938, while in robust

health leading an active life on an Arizona ranch, she awakened one morning with a heavy, dull feeling in her left chest. Again she noted the sensation of a shifting weight, dyspnea and pain when leaning forward.

However, she also noted a loud clicking, snapping noise, synchronous with her heart beat and audible at all times no matter what position she assumed. In addition, when lying on her left side, she heard another sound, a "crunching, crackling sound like small chicken bones being crushed". This sound she can not say with certainty was synchronous with her heart beat. Both sounds were easily audible to persons in the room with her.

Both the clicking and the crunching noises could be produced at will during the time in which her lung was either collapsing or re-expanding. Re-expansion was complete in two weeks.

Fourth attack: In March, 1939, while in good health enjoying a short walk, she noticed a heavy sensation in her left chest. On leaning forward, the "shift of weight" was felt. Several hours later the loud clicking noise and the crunching sound became audible. X-ray taken within a hour showed a small amount of air in the apex of the left pleural cavity, visible only after full expiration. Re-expansion was complete in six weeks.

Fifth attack: In June, 1940, the heavy sensation reappeared together with the usual symptoms. Again the very loud clicking noise synchronous with each heart beat was easily audible to any one within twenty or more feet of her, and slightly less audible was the crunching noise heard when she sat leaning forward to the left side, also synchronous with the heart beat.

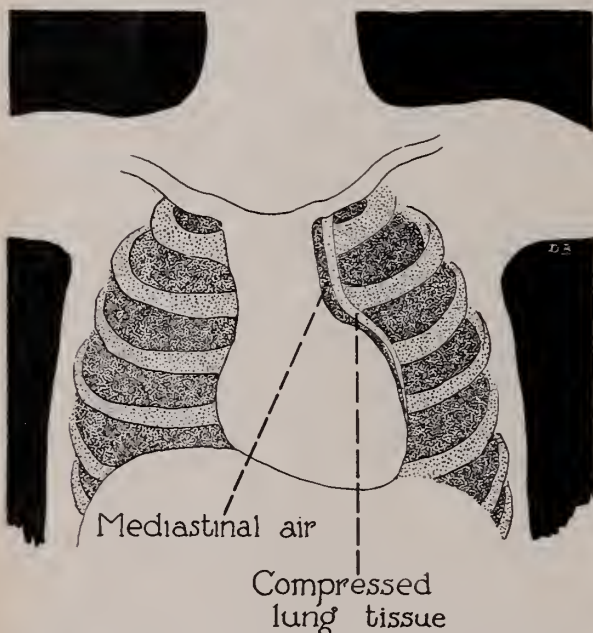
The sounds were present during the process of collapsing and re-expansion. Re-expansion was complete in six weeks.

X-ray about four days after onset of symptoms showed a small air pocket in left pleural apex, visible only after full expiration.

Sixth attack: On March 12, 1941, having gone to full term of pregnancy, this patient entered Stuart Circle Hospital under the care of Dr. W. D. Suggs, active labor having begun spontaneously with rupture of membranes. The duration of the first stage of labor was twelve and one-half hours; of the second fifteen minutes; and of the third five minutes. Sedation with nembutal, six grains, and hyoscine 1/120 grain, was followed by novocain infiltration

and vitreous oxide anesthesia. Fortunately the duration of the second stage was brief. About four hours after delivery the patient stated that she could feel in her chest pains similar to those noted at the onset of each attack. Pneumothorax became complete within thirty-six hours and persisted for four weeks.

Case 2.—A twenty-five-year-old man, in October, 1938, while engaged in sedentary office work, suddenly developed a severe pain in the left chest



Schematic drawing based on Dr. Hamman's X-ray picture showing area of lessened density due to mediastinal emphysema.

posteriorly, made worse by movements and breathing. Examination revealed no pathology of the chest, but mild pharyngitis. The pain gradually subsided over a period of several days. When lying down at bed time on the third night after the onset of pain, both the patient and his wife were startled and terrified to hear a loud clicking noise emanating from the region of the patient's heart. Upon approaching the patient's bed, this sound became audible at a distance of several feet. Physical examination demonstrated no abnormalities other than this loud crackling noise, synchronous with the heart beat. There was practically no pain. The sound persisted for approximately twenty-four hours. At no time was air in the pleural cavity demonstrated. Roentgen ray examination was not made. Two years later, however, during another illness, Drs. Hodges and Snead reported a chest film normal.

In August, 1940, Dr. Blackford was asked to examine the female patient, then pregnant, to advise of the risks attendant upon going to term and sustaining labor. During his discussion of the case, particularly of the nature of the peculiar chest sounds heard, Dr. Blackford pointed out that mediastinal emphysema undoubtedly produced these sounds. Failure of X-ray plates to show air in the mediastinal tissues and along the border of the heart shadow may be due to the fact that pictures were not taken in the oblique or lateral positions. Dr. Blackford's discussion and the nature of the sounds heard in this woman's chest recalled to the writer the amazing sounds heard two years before in the second case reported, which had at the time been attributed to a pleuropericardial friction rub.

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**UNUSUAL TUMORS OF THE BRAIN—
With Emphasis on Pathological and Diagnostic Pitfalls—
A Report of Five Cases.***

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Introduction:

The diagnosis of intracranial tumor or other mass lesion of the brain in any individual patient, from the clinical findings alone, may be easy or one of the most difficult problems in medicine. The day has long since passed when the clinician was obliged to wait for the development of the well-known triad of symptoms and signs designating increased intracranial pressure (i.e., headache, vomiting, and choked disks) before he was justified in making a diagnosis of brain tumor. Today it is common knowledge that many patients harboring an intracranial neoplasm in any of a number of loci in the brain may complain of only slight headache, and it is widely appreciated by neurologists and neuro-surgeons that, in 15 per cent or more of any large series of patients with verified brain tumors, there is no appreciable choking of the disks at any stage of the disease, except, perhaps, as a quite terminal event.

The advent and utilization of the X-ray, the appreciation of the value of accurate visual fields for the detection of certain intracranial tumors in their early stages so clearly described by Cushing and his co-workers in a large series of papers, the judicious use of the caloric tests and the audiogram, and, in particular, the fundamental contribution of Dandy¹ who first proposed, in 1918, the deliberate introduction of air into the cerebral ventricles (ventriculography) for exact localization in patients who were probably harboring tumors or other surgical lesions, all aided, immeasurably, the real task of the neurosurgeon with respect to intracranial mass lesions, namely, that they must be detected unequivocally or at least definitely suspected at a reasonably early stage to allow of operative attack before irreparable

damage has been done to important areas of the brain and before advanced pressure symptoms have developed which may well prevent a successful outcome. Coleman² states that the localization of brain tumors by the injection of air into the ventricles is a most important contribution to the surgery of brain tumor and has given to the diagnosis of these lesions a certainty which could probably never have been approached by clinical study alone.

However, even more recently than the diagnostic aids just mentioned, have come other important contributions, particularly in the pathological field. Cushing and Eisenhardt,³ for example, have shown, in the illuminating account of their series of meningiomas, that these tumors are not all of a *benign* nature, as contrasted with the gliomas, and that careful analysis of the histological appearance of the removed tumor is the all-important factor in the case, particularly when prognosis and future methods of therapy are concerned. Occasionally, a tumor of this type, grossly benign, is frankly malignant on histological examination. Other workers have contributed valuable pathological studies, helping to clarify our ideas concerning the pathological types and behavior of intracranial tumors.

It is not only with the thought of presenting five *unusual* instances of brain tumor seen in our Clinic in the last four and one-half years (of interest from a pathological or diagnostic standpoint, as the individual case will demonstrate) that this report has been prepared, but also to re-emphasize the great importance of the *proper correlation and interpretation of all available data* in any individual case—the sum total of clinical, laboratory, surgical and pathological information which should result in a higher percentage of cures and, at the same time, undoubtedly aid in the advancement of our knowledge of the

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symptomatology, pathogenesis and life history of intracranial tumors as a whole.

Case I: A twelve-year-old white school girl with morning headache, vomiting and choked disks. Probable cerebellar or third ventricular tumor. Appendectomy averted by discovery of papilledema. Ventriculogram disclosed undoubted posterior fossa lesion. Suboccipital craniectomy performed: a solid circumscribed glioma (ependymoma) removed except for tiny nubbin of attachment to medulla oblongata; post-operative x-ray treatment. No evidence of recurrence four years after operation.

M. B. (University of Virginia Hospital No. 128312) was admitted on December 13, 1936, complaining chiefly of periodic morning headache and vomiting.

Ten months before admission headache and vomiting first developed. These symptoms recurred at intervals; the headache was always relieved by vomiting. Diplopia was noticed five months before admission.

It is of interest that four and one-half months before her present admission, she had been admitted to the surgical service with a tentative diagnosis of subacute appendicitis; the history was quite suggestive of such a lesion. However, she also had headache and the surgical interne (Dr. Ferguson) detected choked disks at that time; this finding first suggested that the periodic gastric disturbances were probably primarily intracranial in origin.

For several weeks before admission, there had been an increase in the headache, which was located anteriorly over the forehead. Slight ataxia and a tendency to drop objects from her hands had developed. There was no subjective visual failure.

Examination: Temp. 98.6°, Pulse 88/M, Resp. 20/M, B. P. 114/78.

She was very cooperative and well-oriented. The pupils were widely dilated but reacted well to light and accommodation. There was a bilateral choked disk of 4 or 5D; little or no nystagmus was observed.

She fell backward in the Romberg position. There was definite ataxia bilaterally and adiadokokinesia was present.

*Laboratory Finding:** The spinal fluid protein, determined on a previous hospital stay (August, 1936), had been 191 mgm.%. The visual acuity and fields were normal. Skull x-rays showed marked separation of the suture lines.

The *pre-operative diagnoses* were: (1) posterior fossa (cerebellar) tumor or (2) third ventricular tumor (in view of the intermittent symptoms). A ventriculogram was advised.

Operation: This disclosed (December 16, 1936) generalized ventricular dilatation. A suboccipital craniectomy was performed immediately (avertin-ether anesthesia).

*In this patient, as well as in the four other cases, the blood count and urinalysis were normal and the blood and spinal fluid (if examined) Wassermann reactions were negative unless otherwise specified.

An extract from the operative note reads: "The dura over the cerebellum, when first exposed, was very tense. This was relieved by tapping both lateral ventricles. The dura was then opened widely and in the posterior portion of the fourth ventricle (calamus scriptorius) the tumor could be seen immediately (Fig. 1). It was a large reddish gray, fairly well-outlined lesion, obviously a glioma, extending well below the atlas, a laminectomy of which was necessary for complete exposure of the neoplasm. The growth could be easily circumscribed with a blunt instrument and was removed *in toto* with the aid of silk traction sutures except for its small (0.5 cm.) attachment to the medulla, excision of which might have resulted in permanent impairment of vagal

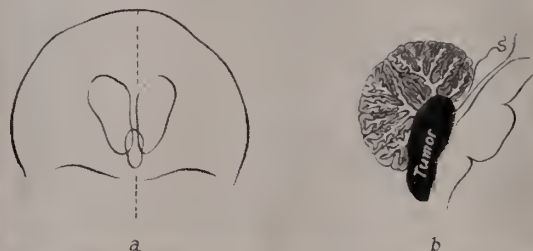
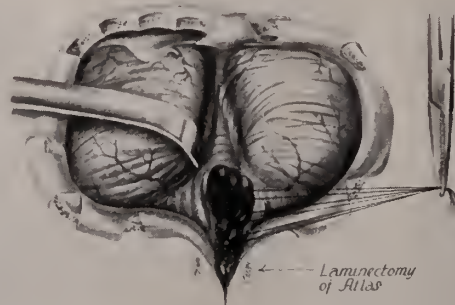


Fig. 1.—Artist's drawing of the tumor in Case I. The larger drawing (above) shows the 4th ventricular neoplasm in process of removal with the aid of traction sutures. A laminectomy of the atlas was necessary properly to expose the glioma without injury to the underlying medulla oblongata. Inset (a) is a diagrammatic sketch of the A-P ventriculogram view demonstrating typical symmetrical dilatation of both lateral and the third ventricles. Inset (b) demonstrates the position of the tumor in relation to the underlying brain stem and the overlying cerebellum.

functions. Following the removal of the tumor, the smooth glistening ependymal lining of the fourth ventricle was then seen and the ventricular system was completely unblocked."

The *histologic diagnosis* of the tumor (Dr. James Cash) was *ependymoma*.

Post-Operative Course and Follow-Up Notes: Her immediate post-operative condition was rather precarious. The temperature ranged from 100° to 104° for a few days but this was controlled by lumbar punctures. Dysarthria and dysphagia were fairly marked; the latter

necessitated nasal tube feedings. These developments (particularly the hyperthermia) were doubtless due—in part—to the wide opening of the fourth ventricle in the course of the removal of the tumor. The patient was discharged in good condition on January 9, 1937, and she received intensive x-ray therapy during the ensuing year. When last examined (December, 1940) four years after operation, there was no sign of recurrence and she was progressing well at school. The fundi and vision were normal.

Discussion: Spontaneous morning vomiting, particularly in children, whether associated with headache or not, demands an immediate inspection of the optic fundi and, in fact, a complete neurological examination in search of an intracranial tumor (frequently in the posterior fossa). There may be no subjective visual impairment, even though choked disks are present, a fact well-known to ophthalmologists. If not relieved promptly, the choking will inevitably produce secondary optic atrophy with resultant blindness; a rather sudden loss of vision, perhaps in a few days, is not rare in such cases. Nothing is more tragic than to see a patient who has had an intracranial tumor completely removed but who is blind or practically so because operation, for one reason or another, was not performed in time to preserve vision.

Ependymomas quite occasionally occur in the cerebellum in children. Cushing⁴ has stated that they are most frequently found, as in this patient, in the posterior fossa. All such tumors reported by Bailey, Buchanan and Bucy⁵ in patients less than sixteen years of age were in the fourth ventricle. Ford⁶ observed that ependymomas may also occur in the lateral and third ventricles. He also significantly stated that, when situated within the fourth ventricle, the operation is very hazardous.

These tumors grow slowly, producing symptoms of cerebellar involvement and of increased intracranial pressure. Fincher and Coon⁷ emphasized the occasional finding of calcified areas in posterior fossa ependymomas.

Bailey⁸ summed up the important points succinctly in regard to childhood vomiting by stating "The vomiting of tumor occurs intermittently. A child who has vomited may be fed immediately afterwards. Such vomiting is often forceful and there may be intense nausea. I have seen two children with cerebellar tumors who vomited so constantly with such abdominal distress that they were treated for weeks by well-trained pediatricians for cyclic vomiting."

Bailey⁹ also asserted "The young physician should acquire an ophthalmoscope as early as a stethoscope and learn to use it as well."

Case II: A twenty-eight-year-old white miller with long-standing attacks of narcolepsy (?) developed severe morning headache, vomiting and diplopia, four months before admission. No choked disks. Ventriculogram showed a posterior fossa tumor; a large solid glioma (ependymoma) completely filling the fourth ventricle was subtotally removed. Post-operative recovery, followed by x-ray therapy.

Mr. A. L. (University of Virginia Hospital No. 139707) was admitted on June 15, 1938, complaining chiefly of severe morning headache, vomiting and ataxia.

He had been treated previously for peculiar attacks of five years' duration: he was suddenly unable to move any extremity although he did not lose consciousness, but felt unusually drowsy at the time. He had been taking benzedrine or ephedrine daily for several years as the attacks resembled a form of narcolepsy. There was also a history of vascular hypotension.

However, about four months before admission, he developed an entirely different symptomatology: vertigo, severe morning headache with vomiting, ataxia and diplopia.

Examination: Temp. 98.2°, Pulse 58/M, Resp. 16/M, B. P. 86/54.

He was conscious and cooperative. There was marked suboccipital tenderness on palpation. The fundi appeared normal, except for slight haziness of the right disk. There was marked nystagmus.

He swayed generally in the Romberg position and there was definite ataxia of the legs.

Laboratory Findings: Skull x-rays, caloric tests and eye examination were normal.

The *pre-operative diagnosis* was a posterior fossa tumor with the possibility that it might be multiple sclerosis, if the ventriculogram proved to be normal.

Operation: A ventriculogram (June 22, 1938) showed a symmetrical ventricular dilatation, including the third ventricle. A suboccipital craniectomy was performed immediately (avertin-ether anesthesia).

An extract from the operative note reads: "The occipital bone was very thin and the dura, when exposed, was under great tension. The left lateral ventricle was tapped several times during the operation. Even with this aid, the cerebellar cortex tended to protrude markedly through the dura, which was, therefore, opened at first for only 2 to 3 cms. over each hemisphere. Cerebellar tissue was aspirated away until the intradural tension was relieved. As the dura was reflected posteriorly, the neoplasm was apparent: a large solid whitish-gray glioma extending not only to the posterior portion of the fourth ventricle (calamus scriptorius) but beneath the atlas as well. The tumor appeared to fill the fourth ventricle entirely. It was not very vascular and could be circumscribed easily with a sharp dissector although it was adherent to the medulla oblongata

(Fig. 2). With the aid of suction and pituitary scoops, most of the tumor was removed except for its attachment. All intradural tension was thereby relieved, the cerebellum pulsated normally and fluid and air could be seen coming down through the iter into the fourth ventricle. At the close of the operation the patient was conscious and talking rationally, with little or no dysarthria or dysphagia.

The *histological diagnosis* of the tumor (Dr. C. R. Tuthill) was *ependymoma*.

Post-Operative Course and Follow-Up Notes: Recovery was uneventful. X-ray therapy was given (July, 1938).

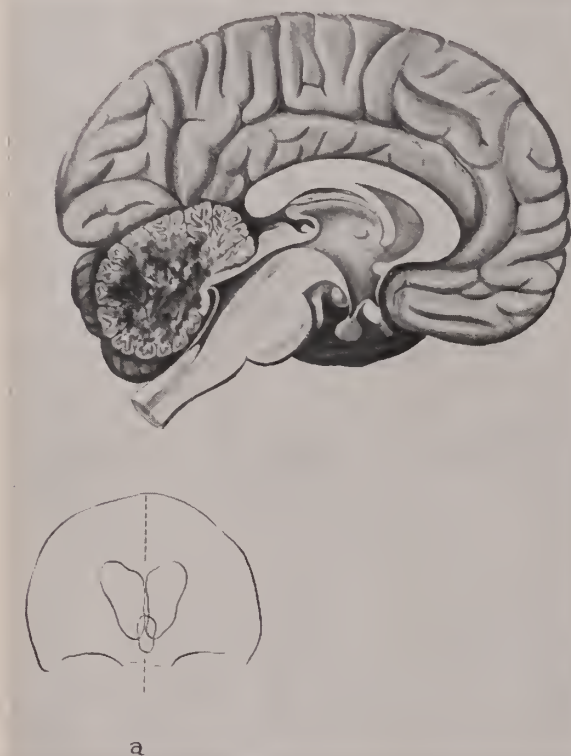


Fig. 2.—Case II. Artist's drawing of imaginary lateral view of brain to demonstrate complete occlusion of fourth ventricle by midline cerebellar tumor (4th ventricle was also entirely filled with tumor (see text) although not shown in this drawing). Inset (a) shows the typical internal hydrocephalus (A-P ventriculogram) seen with such a tumor, although the optic disks were normal in this case.

When last seen on June 26, 1940, two years after operation, the suboccipital decompression was under no tension and there were no signs of recurrence. He has returned to his work in the mill.

Discussion: The original symptoms of narcolepsy (?) were confusing in view of the subsequent development of a cerebellar tumor.

Another unusual feature of this case was the presence of a large solid glioma (ependymoma) completely filling the fourth ventricle to the extent of producing marked internal hydrocephalus (Fig. 2a),

but with *normal eye grounds*. Cushing⁴ recorded an exactly similar case in which headache, vomiting, unsteadiness and a supposedly Parkinsonian appearance developed. A cerebellar tumor was considered possible by the internists who first saw the patient but an alcoholic toxemia or a post-encephalitic syndrome was a more probable diagnosis, as the eye grounds were normal. A ventriculogram was performed which showed greatly dilated ventricles and an immediate cerebellar exploration disclosed a large, solid ependymoma apparently filling the entire fourth ventricle. The photographs accompanying Cushing's case show it to have been very similar to that in Case I of this paper.

Accumulation of cases such as these—and they can doubtless be duplicated in other neuro-surgical clinics—requires revision of our concepts of cerebellar tumor symptomatology. It used to be thought that posterior fossa tumors, as a group, invariably produced a greater or lesser degree of choked disks by occlusion of the aqueduct of Sylvius or the fourth ventricle. It is now known that cerebello-pontine angle tumors (also in the posterior fossa) not infrequently attain a large size without the development of papilledema or even internal hydrocephalus, but this is more understandable as they are *eccentrically* located with respect to the midline ventricular system. However, when the tumor is in the midline, completely filling the fourth ventricle and producing an enormous internal hydrocephalus, but no papilledema, as in Case II herein reported and in Cushing's case just cited, it is indeed unusual and demands a reconsideration of the pathogenesis of choked disks.

This case also demonstrates the value of ventriculography in borderline neurosurgical cases, from a clinical standpoint. Horrax¹⁰ emphasizes the importance of cerebral air studies in the differentiation of brain tumor from intracranial vascular disease and the writer¹¹ has recently reported a series of cases demonstrating its value in: (a) psychiatric cases, (b) cerebral vascular lesions, (c) post-traumatic sequelae, (d) arachnoiditis, and (e) epilepsy.

The necessity for reduction of *intradural tension* before opening the dura widely in brain tumor operations cannot be over-emphasized. Not to do so invites disaster due to rupture of the brain cortex, serious or uncontrollable hemorrhage and damage to important, even vital, nervous structures. This techni-

cal procedure has been recently (1939) emphasized in a paper by Crutchfield and the writer.¹²

Case III: A thirty-nine year old white housewife with headache and astereognosis of the right hand. Examination elsewhere disclosed bilateral cervical ribs, considered to be probable cause of patient's complaints. No signs of increased intracranial pressure. Spinal fluid pressure normal (protein 50 mgm.%). Ventriculogram showed undoubted presence of left parietal tumor. Immediate craniotomy with complete removal of large meningioma. Recovery.

Mrs. M. P. (University of Virginia Hospital No. 148798) was admitted on May 12, 1939, complaining of headache and "numbness and weakness of the right

(elsewhere) of the pituitary gland for presumed "menopausal headaches" had produced no relief.

Eleven months before admission, she had been studied extensively elsewhere and a diagnosis of bilateral cervical ribs (disclosed by x-ray examination) with pressure phenomena was made, although her complaints, even then, were numbness, tingling and occasional twitching of the right arm and hand. It was thought at that time that the patient did not have primary disease of the nervous system and postural correction, muscle stretching exercises, massage and local heat applications to the right arm were advised, without relief.

Examination: Temp. 98.8°, Pulse 96/M, Resp. 20/M, B. P. 168/100 (right), 170/100 (left).

She was quite conscious and rational. There was no choking of the optic disks.

There was complete astereognosis of the right hand with slight but definite spasticity of the fingers of that hand. The right elbow jerks were slightly exaggerated. A Hoffmann's sign was present on the right side and also a bilateral equivocal Babinski sign, more suggestive on the right side.

Laboratory Findings: The patient had slight anemia (Hb. 78%). Skull x-rays (May 12, 1939) disclosed definite enlargement of the normal vascular channels in the left parietal region. X-ray examination also showed a pair of cervical ribs.

An almost certain *pre-operative diagnosis* of left parietal meningioma was possible from the above data but because of the normal fundi and the normal spinal fluid pressure, a ventriculogram was recommended.

Operation: This showed (May 29, 1939) a pronounced shift of the ventricular system toward the right side (Fig. 3). Immediate craniotomy was performed (Dr. C. C. Coleman), under novocaine (1%) anesthesia.

An extract from the operative note reads: "The bone was very vascular. The dura oozed from innumerable points and underneath it could be palpated a large firm tumor. The large middle meningeal artery was occluded in the inferior portion of the exposed dura; this effectively controlled most of the dural bleeding. The dura was incised completely around the body of the tumor which was imbedded rather deeply in the left parietal lobe. The growth (with its dural attachment) was removed practically *in toto* from its bed. The dural defect was covered with a transplant from the adjacent temporal fascia. The entire bone flap was replaced as it was not invaded by the tumor".

The *histological diagnosis* of the tumor (Dr. J. R. Cash) was *meningioma* (Fig. 4).

Post-Operative Course and Follow-Up Notes: Recovery was uneventful. Weakness of the right hand was present for several weeks but this eventually improved very greatly. A dynamometer reading at the time of the last examination (April 27, 1940) was recorded as Right: 85. Left: 100. Complete astereognosis of the right hand has persisted to date. No grand mal seizures have occurred except on one occasion six months after operation (November, 1939) when she neglected to take the prescribed



Fig. 3—Case III. A-P ventriculogram in patient with a left parietal meningioma. The entire ventricular system is definitely displaced to the right and the left lateral ventricle is considerably flattened by pressure from above. The spinal fluid pressure was normal (135 mm. of water) and there was no papilledema. The arrows point to an enlarged diploic vein in the vicinity of the tumor. The patient also happened to have bilateral cervical ribs of no clinical importance and complete astereognosis of the right hand.

hand of at least a year's duration." Occasionally, the right hand would "shake and quiver and feel quite cramped," but no grand mal seizure had ever occurred. She could not discern the nature of objects in the right hand. Headache was generalized and occasionally accompanied by nausea and vomiting. X-ray treatment

phenobarbital for three consecutive weeks. Her present condition is excellent.

Discussion: The points to be emphasized in this case are two:

(a) From a *diagnostic* standpoint the discovery of bilateral cervical ribs was completely misleading. The cervical rib or anterior scalene syndrome is of a *peripheral* type, causing weakness and atrophy of the lumbricales and interossei muscles of the affected hand, together with pain and (or) numbness, usually on the ulnar side of the hand, and diminished or absent elbow jerks and diminution or obliteration of the radial pulse. This patient had (on the other

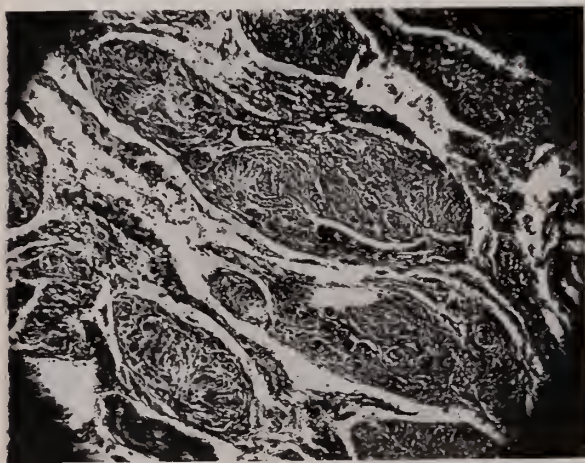


Fig. 4.—Microphotograph of tumor removed in Case III showing a benign meningotheelial tumor with characteristic whorl formation. H. & E. stain $\times 95$.

hand) as her chief neurological complaint (apart from headache which, in itself, should have suggested an intracranial lesion), *complete astereognosis of the right hand*, which is practically always of cerebral (cortical) origin, leading readily, in this instance, to a clinical diagnosis of a probable left cerebral tumor. The slight but significant elevation of spinal fluid protein (50 mgm. per cent) should be stressed. Patients from whom tumors have been removed in the vicinity of the cerebral motor areas should continue to take phenobarbital for an indefinite period thereafter to prevent convulsions.

(b) There was nothing unusual about the *pathological* appearance of the tumor, either grossly or histologically: the common benign whorl-forming type of meningioma. As emphasized by Horrax¹³ "The outlook for patients who have meningiomas (of this histological type)* is most favorable." How-

ever, it is now known that the generic term "meningioma" includes a variety of neoplasms, practically all of which may appear grossly benign at an initial operation, but which may actually have highly malignant (sarcomatous) properties and recur rapidly. Cushing and Eisenhardt³ have divided their series of verified meningiomas into nine main types. The tumor in Case III (just described) is typical of their Type I (of which there are four variants). That a meningioma may behave pathologically in an entirely different manner is clearly demonstrated by the following case:

Case IV: A twenty-three-year-old male bookkeeper with left-sided tinnitus (no deafness), bilateral choked disks, severe headache, haziness of vision and diplopia. Left occipital meningioma encountered in course of ventriculogram procedure. Tumor removed in toto except for tiny dural (sinus) attachment. Undoubted signs of recurrence two months later. Re-operation eight months after first operation for massive recurrence of malignant type of meningioma: subtotal tumor removal followed by x-ray therapy (two courses). Patient free of disabling symptoms thirty-nine months after second operation.

Mr. V. B. (University of Virginia Hospital No. 131847) was admitted to the service of Dr. D. C. Wilson on May 24, 1937, complaining of almost constant left-sided headache, tinnitus in the left ear and diplopia. The symptoms had begun with tinnitus six months previously. Severe headache had been present for six weeks although the diplopia was only of five days' duration.

A neuro-surgical consultation was requested.

Examination: Temp. 98.4°, Pulse 88/M, Resp. 18/M, B. P. 128/78.

His general condition was excellent. Pressure on the left occiput induced moderate tenderness. There was a bilateral choked disk (3-4D). Left abducens weakness was apparent as well as sustained nystagmus in looking to either side. Hearing was normal bilaterally. There was questionable ataxia of the left arm and leg.

Laboratory Findings: Skull x-rays (May 25, 1937) revealed marked erosion of the left petrous ridge. Visual fields (May 28, 1937) showed a questionable incomplete right homonymous hemianopsia, especially with the colored test objects. An audiogram was normal.

The *pre-operative diagnosis* was: cerebellar tumor giving rise to left cerebello-pontine angle symptoms. However, because of the equivocal cerebellar signs, the normal hearing and the questionable right homonymous hemianopsia, a ventriculogram was advised.

First Operation: (June 4, 1937; Dr. W. G. Crutchfield; 1 per cent novocaine anesthesia):

The ventricular needle, in passing through the left parieto-occipital region, encountered a firm mass at a depth of 3 to 4 cm.; the left lateral ventricle could not be reached. A left occipital bone flap was therefore immediately outlined. An extract from the operative note reads: "The dura was opened and the left occipital

*Parenthetic phrase inserted by the present writer.

cortex—under considerable pressure—was aspirated away, thus uncapping a firm red apparently benign tumor the size of a small orange attached rather firmly to the superior petrosal sinus and the left petrous bone. The growth (which did not invade the brain) was entirely removed except for a tiny (0.25 cm.) nubbin of tissue attached to the petrosal sinus.”

The *histological diagnosis* was *meningioma* and a good prognosis was given.

Post-Operative Course: The patient made an excellent recovery; the headache and choked disks rapidly disappeared within three weeks' time. However, he was re-admitted four months later (October 16, 1937) with recurrence of headache (of two months' duration); the disk margins at this time were hazy. The spinal fluid pressure was 280 mm. of water. He was again admitted on January 27, 1938, about seven and one-half months after the first operation. The decompression was very tense even when he sat erect, severe headache was present and the choked disks had re-appeared (3D). Re-operation was advised.

Second Operation (February 8, 1938; J.M.M.): Under ether anesthesia, the old scalp flap was re-opened; the dura was 7 to 8 mm. in thickness. Under the dura was found an enormous solid very vascular undoubtedly malignant growth which was invading the brain. A frozen section biopsy (Dr. Page Newbill) was reported as a malignant meningioma; the neoplasm was subtotally removed. The patient was in good condition at the close of the operation.

The fixed sections of the *tissue removed* at the second operation showed (Dr. C. R. Tuthill) a *meningeal sarcoma* (Fig. 5).

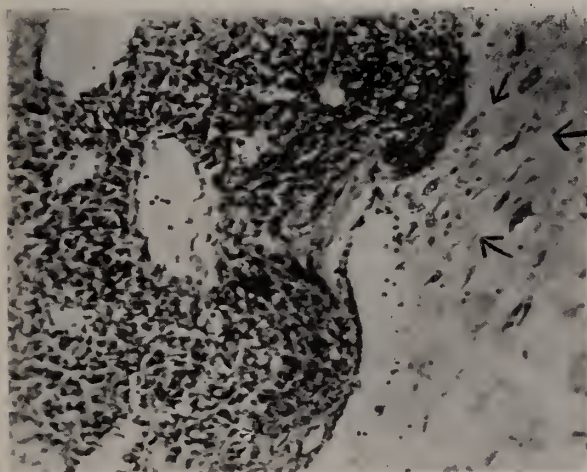


Fig. 5.—Microphotograph of tumor tissue removed at second operation in Case IV demonstrating a meningeal sarcoma with reticulin of polar cells surrounding round and oval cells in alveolar formation. Rupture of capsule and invasion of cortex seen at right (arrows). Toluidin blue stain x 120.

Present Status: Two courses of x-ray therapy were given after the second operation and he is now in excellent condition. The optic disks are normal and he is

free of headache. A slight, almost imperceptible, sensory aphasia is present.

Discussion: This tumor was in an unusual location: attached to the basilar dura in the middle fossa and the superior petrosal sinus and simulated somewhat a cerebello-pontine angle syndrome. Horrax,¹⁴ in his Clinical Lecture on “Meningiomas of the Brain” at the Annual Session (1938) of the American Medical Association, reported sixty personal cases, none of which were located in this region. By a fortunate circumstance, the exploring ventricular needle, intended for ventriculography at the time of the first operation, impinged on the tumor and immediate craniotomy enabled the operator to deal adequately with the growth.

However, the chief interest in this case centers on its *histological characteristics* and the importance of this in prognosis and future therapy.* The diagnosis of meningioma at the first operation, together with the fact that the tumor had been completely removed except for a tiny nubbin of attachment, led to a favorable prognosis and no X-ray therapy was given at that time. When undoubted clinical signs of recurrence developed within two months of the first operation, and a massive tumor with invasion of the brain itself (Fig. 5) was demonstrated at the second operation, it was apparent enough that a malignant growth was present. Scrutiny of the tissue removed at the second operation demonstrated a meningeal sarcoma, similar, in all respects, to the tumors of *mesodermal* origin reported by Bailey¹⁵ and by Hsü¹⁶ (from Bailey's Clinic) under the term “alveolar sarcoma”. Bailey¹⁷ believes that all tumors of this type arise from the leptomeninx or its derivatives and are exceedingly rare. This neoplasm is not to be confused with the old-time type of intracranial “sarcoma”, which diagnosis was recorded frequently in the surgical and pathological literature of the last century; these latter tumors are now properly designated as glioblastoma or spongioblastoma multiforme and are of *ectodermal* origin. Such a case, then, provides an exception to Davis' statement¹⁸ that

*Another case, possibly related to the meningiomas, and histologically malignant, has recently (December, 1939) been treated in our clinic: An adolescent boy, with severe right-sided Jacksonian convulsions, was found to have a large left cerebral cyst, the tumor nodule of which was not a glioma. The boy recovered post-operatively and has done well to date (May, 1941). The histological features of the tumor nodule which was removed *in toto*, are of such interest that they have been incorporated in a special report (now in preparation) of the case.

meningiomas are benign growths which do not invade brain tissue but only involve it by pressure, and are, from that standpoint, the most favorable of all intracranial tumors for surgical attack. Horrax¹⁹ states that the meningiomas may differ considerably in their histological picture. The tumor removed from this patient (Case IV) does not fall into any of the nine histological types designated by Cushing and Eisenhardt³ following an analysis of their large series of verified meningiomas (306 cases). They believe,²⁰ however, that certain global meningiomas are actually sarcomatous from the beginning and that meningiomas rarely if ever change their histological types but that a given tumor, of sarcomatous nature, has been sarcomatous from the outset. They refer, however, to two cases (not of their own material) in which a sarcomatous transition (from an originally benign meningioma) appeared to have taken place, as in this patient (Case IV).

This neoplasm is identical with one of the four types of intracranial sarcoma previously cited by Hsü,²¹ namely, the "alveolar sarcoma", the other three types being (a) sarcomatosis of the meninges, (b) fibrosarcoma and (c) perithelial sarcoma. Hsü's statement²² in regard to intracranial sarcomas (malignant tumors of mesodermal origin) as a group may profitably be quoted: "all intracranial sarcomatous tumors are rapidly growing, with numerous mitotic figures, and, although they do not . . . , metastasize outside the intracranial cavity, they do spread widely along the leptomeningeal or perivascular spaces, are not encapsulated and are rapidly destructive to the neural parenchyma. Their rarity is doubtless exaggerated by the fact that they are not often diagnosed."

Case V: A twenty-eight-year-old white farmer with severe posterior headaches and vertigo. Left homonymous hemianopsia. Extensive calcification (x-ray) in right temporo-parietal region. Craniotomy disclosed unusual calcified lesions: true bone formation in and overlying the right cerebral hemisphere, which were removed in large part. Recovery. Disappearance of left homonymous hemianopsia.

Mr. J. T. (University of Virginia Hospital No. 143923) was admitted on October 28, 1938, complaining of severe headache and "eye trouble".

In June, 1936, he first became aware of headache chiefly in the occipital region. Vertigo also developed and persisted for several hours at a time. No convulsions had ever occurred. He had had difficulty with his eyes for many years, probably since birth, both in extra-ocular movements and in vision itself. Skull x-rays

taken elsewhere ten days before admission showed extensive calcification in the right cerebral hemisphere. Two weeks previously the development of severe headache caused him to seek relief.

Examination: Temp. 98.6°, Pulse 72/M, Resp. 20/M, B. P. 132/78.

He was quite conscious and rational. No signs of increased intracranial pressure were present. There was tenderness over the skull posteriorly on deep pressure. The optic disks were well outlined. The left pupil was larger than the right and there was a paralysis of the right superior rectus muscle; the patient had congenital strabismus. The left biceps jerk was slightly exaggerated.

Laboratory Findings: Skull x-rays (October 28, 1938) showed a large number of irregular calcified masses of various sizes lying, apparently, near and (or) on the cerebral surface of the right temporo-parietal region (Fig. 6).

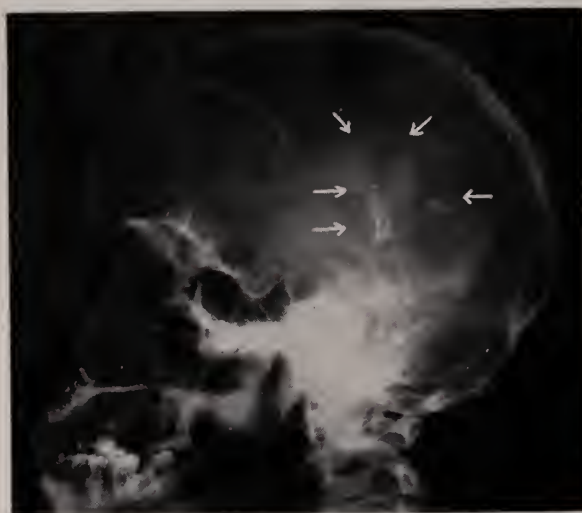


Fig. 6.—Case V. Right lateral x-ray view of skull demonstrating the extensive calcification in the right temporo-parietal region (arrows). The patient also had a left incomplete homonymous hemianopsia which disappeared after operation.

Visual fields (October 29, 1938) showed an acuity of 20/32 minus two in each eye and a definite incomplete left homonymous hemianopsia.

The *pre-operative diagnosis* was a right cerebral calcified lesion, possibly a hemangioma or calcification in a glioma.

Operation: On November 1, 1938, a moderate sized right-sided bone flap was turned down, under avertin-ether anesthesia. An extract from the operative note reads: The bone was very vascular. The dura was at first rather tense but, on opening it inferiorly, a large amount of subarachnoid fluid escaped. Thereafter the hemisphere receded markedly from the under surface of the dura. There was no evidence of a hemangioma and the recession of the hemisphere almost certainly eliminated the possibility of a glioma. A most unusual lesion was disclosed: large calcified bony plaques were found

lying on the surface of the cortex and imbedded in the brain itself. In addition, the subarachnoid space was seeded with innumerable tiny calcified masses (Fig. 7).

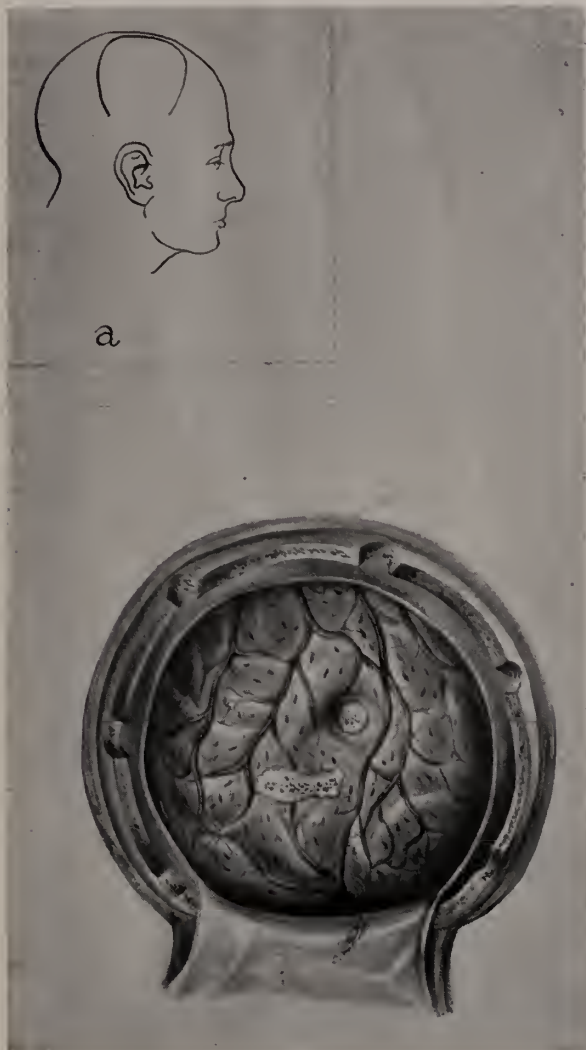


Fig. 7.—Case V. Artist's drawing of appearance of surface of brain as disclosed at operation. The (upper) spherical bony mass extended several cms. into the right temporal lobe and probably accounted for the left-sided incomplete hemianopsia. The (lower) flat bony plaque did not appreciably penetrate the brain. Innumerable tiny calcified masses are "seeded" over the surface of the brain in and beneath the arachnoid. There was no evidence of hemangioma. Bacteriologic and pathologic examination of the removed osseous and calcified tissue demonstrated no tubercle bacilli. Inset (a) shows the approximate location of the bone flap.

Some of the larger masses were undoubtedly due to true bone formation and certain of them appeared caseous. All the larger plaques were removed, in particular a bony tumescence with a rough irregular surface that extended several centimeters into the temporal lobe and was probably the cause of the hemianopsia. These were sent to the pathological laboratory for histological study and to the bacteriology laboratory for guinea pig inoculation (tuberculosis?).

The *histological diagnosis* of the removed material was: *osseous tissue, i.e., true bone formation (osteoma)*. The guinea pigs inoculated with an emulsion of the calcified masses developed no tuberculosis and an acid-fast stain of this material revealed no tubercle bacilli.

Post-Operative Course and Follow-Up Notes: The patient's immediate recovery was entirely satisfactory. A lumbar puncture performed on the tenth post-operative day showed a normal pressure (120 mm. of water); the fluid contained 10 mgm.% of protein and no cells. The spinal fluid phosphorus was 1.35 mgm.%, the calcium 4.5 mgm.% and the phosphatase 0.41 Bodansky units (normal).

All headache rapidly disappeared. Post-operative eye examination (November 12, 1938), made on the day before discharge, showed an acuity of 20/20 minus three on the right and 20/25 minus four on the left with full peripheral fields, i.e., the left homonymous hemianopsia had disappeared. He has continued to do well and is now engaged in heavy farm work.*

Discussion: In examining the pre-operative roentgenograms, it was thought that this patient possibly had a right cerebral angioma or one of the gliomas (oligodendroglioma, ependymoma, astrocytoma, etc.), although there were no clinical signs of increased intracranial pressure. Bailey²³ states: "the differential diagnosis of intracranial calcification is difficult. The only typical calcification occurs in the angioma, where parallel curved lines are distinctive. Even in this instance, confusion may arise with calcification in blood vessels of *normal* distribution. . . . When the calcification occurs near the inner table of the skull or near great dural septa one must be careful to differentiate it from that occurring in the meninges or in the rare calcification of meningeal tumors. Any slowly growing glioma may be calcified." Grinker²⁴ observes that diffuse calcification in various parts of the brain has been described in association with epilepsy. Normally, in adults, calcium deposition often is seen in the pineal body, the choroid plexus, the falx cerebri and occasionally in the meninges, as McKendree, Wortis and Soltz²⁵ point out, although such deposits would not explain the diffuse calcification visualized in this patient (Case V). They also emphasized that the absence of altered calcium metabolism elsewhere in the body (as in case V) and the normal content of calcium, phosphorus and phosphatase in the spinal fluid,

*This patient subsequently developed severe left-sided Jacksonian seizures with unconsciousness. He was reoperated on at the same site (November 14, 1940) and the right motor cortex was found to be extremely adherent to the dura. The adhesions were released, the dura left partly opened (decompression) and he is now free of convulsions.

indicate a *localized alteration* in the brain. The three cases of multiple intracerebral calcification (attributed to faulty calcium metabolism) reported by these writers were associated with paroxysmal convulsive disorders. Eaton and Haines²⁶ are familiar with seven cases of hypoparathyroid tetany in which post-mortem examination of the brain revealed extensive cerebral calcification, usually in the basal ganglia. Intracranial calcification in such patients is not particularly unusual, and is due, presumably, to altered calcium metabolism incident to hypoparathyroid tetany. However, the case (V) herein described showed no evidence of tetany.

Apart from these considerations and putting aside, for the moment, the possible physiologic-pathologic imbalance of calcium metabolism resulting in such extensive intracranial calcification as occurred in this patient (Case V), attention is directed to the possible histogenesis and relationship to tumor formation of such a lesion. Although not a case of tumor peculiar to the brain alone, the possibility that it was *neoplastic*, rather than due to altered calcium metabolism only, had to be definitely entertained. Undoubtedly the calcified masses removed at operation were examples of true bone formation (osteomata) and their possible source appeared to be of great interest, if only because of their rarity in such a location. Thin bony plaques are not infrequently found overlying the spinal cord when the dura is opened but they are much rarer intracranially; in fact, the lesion described in this patient was unique in the writer's experience.

In regard to the pathogenesis of true intracranial bone formation, it is of interest that Cushing and Weed,²⁷ in 1915, in reporting their studies on calcareous and osseous deposits in the arachnoidea, stated that "such calcareous deposits are associated with a hyperplasia of the arachnoidal mesothelium. The deposits of lime salts are apparently laid down in these cell bodies. The occurrence of true bone formation in the arachnoid of man should be regarded as a similar phenomenon, except that one may consider the process of ossification to be proliferative rather than degenerative. The so-called dural endotheliomas (meningiomas) show histologically the same cellular arrangements with calcium and osseous deposits that are commonly found in the arachnoid and therefore take their origin, in all probability, from the mesothelium of this membrane." This reasonable explanation of the probable identical origin

of meningiomas, osteomas and calcareous deposits in the arachnoid is intriguing.

Finally, in discussing the anatomical source of the meningiomas, Cushing and Eisenhardt²⁸ refer to work with Weed in which the relationship of calcareous and osseous deposits in the arachnoid to meningeal tumors was pointed out, and they allude to other studies of the arachnoidal cell rests of the cat's meninges in which they observed gradation in advancing age from slight areas of thickening to actual tumefaction, interpreted as a phenomenon of senescence.

Certainly, the osseous lesions which developed in this patient (Case V) are closely related to the meningiomas, so far as their histogenesis is concerned. The case is an unusual illustration of a benign intracranial lesion which should always be included in the differential diagnosis of patients who present greater or lesser degrees of intracranial calcification.

SUMMARY

Five unusual cases of brain tumor are presented, some of them with reference to pitfalls in diagnosis which delayed operative relief; others, to emphasize that a realignment of pathological concepts of certain brain tumors is necessary, thus aiding, apart from academic interest alone, in the prognosis and future therapy of such cases. These cases are, in order:

I. A school girl developed morning headache and vomiting which resembled rather closely, at first, attacks of appendicitis. The finding of choked disks led to a practically complete operative removal of a cerebellar glioma (ependymoma).

II. A young miller had morning headache, vomiting and diplopia, but no choked disks. A ventriculogram demonstrated a posterior fossa glioma completely filling the fourth ventricle which was subtotally removed (ependymoma) and X-ray therapy was administered.

III. A housewife complained of headache and astereognosis with clonic twitching of the right hand. Bilateral cervical ribs were demonstrated (X-ray), an incidental finding, which delayed diagnosis of a left cerebral meningioma. The tumor was completely removed.

IV. A young bookkeeper observed left-sided tinnitus as an initial symptom; severe headache, diplopia and choked disks developed: a left cerebral meningioma was removed and a good prognosis

given. Signs of recurrence developed within two months and, eight months later, re-operation demonstrated massive (sarcomatous) infiltration of the brain at the site of the original meningioma. X-ray treatment was given after subtotal removal of the tumor (second operation). This case demonstrates the great importance of very careful histological scrutiny of all meningiomas, as certain of them are now known to be as malignant as the gliomas, if not more so.

V. A young farmer complained of severe headache and vertigo with inability to see toward his left side. Extensive calcification (X-ray) was discovered in the right cerebral hemisphere which proved, at operation, to be due to true bone formation (osteomata), closely related (histogenetically) to the meningiomata.

These patients are presented with the thought that the information imparted by them may definitely aid us in (1) the *earlier correct diagnosis* of patients who are harboring brain tumors, and thus lead to their relief before irreparable damage has been done to important or even vital nervous structures, and (2) appreciation of the necessity for *close histological scrutiny*, especially of apparently benign intracranial tumors (grossly), in order to avoid errors in prognosis and future therapy.

NOTE: The writer wishes gratefully to acknowledge the aid of the Departments of Roentgenology and Pathology at the University of Virginia in the interpretation of the x-ray films and of the histological sections, respectively, of the five cases herein reported.

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DIAGNOSIS AND SELECTION OF TREATMENT FOR CARCINOMA OF THE LARYNX.*

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The high mortality of laryngeal malignancy is a challenge to the physician. In spite of the large amount of missionary work that has been done, little effect has been noted in the field of early laryngeal diagnosis. Carcinoma of the larynx is usually one hundred per cent fatal if it is diagnosed late. Yet, early intrinsic carcinoma of the larynx is more amenable to surgery than a similar lesion located in most any other organ of the body.

Carcinoma of the larynx makes up about four per cent of all malignant tumors of the body, and about sixteen per cent of all tumors of the larynx. The sex ratio shows ninety per cent occurrence in the male, to ten per cent in the female, while the race incidence in this country is ninety-eight per cent in the white, to two per cent in the negro.

There is fundamentally no more known about the cause of laryngeal malignancy than is about the cause of this lesion elsewhere in the body; however, the role of vocal abuse, smoking, and inhalation of tar dust, has been advocated and disputed by authorities of equal importance. We are certain of one fact, however, and that is, malignancy of the respiratory tract is attracting more and more attention, with greater enthusiasm each year.

Early recognition of malignancy of the body is always an important feature in the patient's recovery, though in many organs of the body, early recognition is frequently impossible. On the contrary, the interior of the larynx offers an exceptional opportunity to recognize lesions early, because the thick cartilaginous box acts as a barrier to extension, and because the lymphatic system supplying the vocal cord region of the larynx is extremely meager. Recognizing these facts as common knowledge, why is it then that malignancy of the vocal cord is not diagnosed sufficiently early to justify a conservative operation? There are mainly two reasons for this: (1) approximately eighty per cent of all laryngeal carcinomas involve the vocal cords first and, as hoarseness is the only symptom produced at this

stage of the lesion, the patient is frequently reluctant to seek early medical aid for what he thinks is a simple laryngitis or some other trivial condition; and (2), failure on the part of the physician always, to regard a patient with hoarseness as a cancer suspect, and to examine the larynx in detail when first consulted.

Jackson has stated, that in patients with carcinoma of the larynx examined by him, only twenty per cent of the total number were suitable for a conservative laryngofissure operation. This statement justifies the assumption that eighty per cent of the cases examined by him were either classed as inoperable or only suitable for a total laryngectomy. This does not necessarily mean that every patient with laryngeal malignancy, whose condition is recognized early, is suitable for laryngofissure operation, because there are certain instances (approximately twenty per cent) in which the lesion is not intrinsic in origin and therefore is unsuitable for such an operation.

Mirror examination of every patient manifesting hoarseness, or slight throat discomfort, would go a long way in recognizing early lesions which could be further studied by direct laryngoscopy and biopsy. This examination is quite simple, though important; yet, it would seem that it is greatly overlooked in the teaching of undergraduate medical students and internes.

Direct laryngoscopy is a more formidable procedure, requiring the use of an operating table, and, in adults, usually some form of local anesthesia. This particular examination is indicated in every case when malignant disease is suspected by mirror examination. This procedure enables one to inspect the deeper portion of the larynx, gives a better view of the posterior laryngeal wall, and aids in instrumental palpation of the lesion. These features are frequently necessary adjuncts to mirror examination.

BIOPSY

The importance of an early biopsy in a suspected malignancy is generally admitted. Postponing this procedure in an effort to make a diagnosis with

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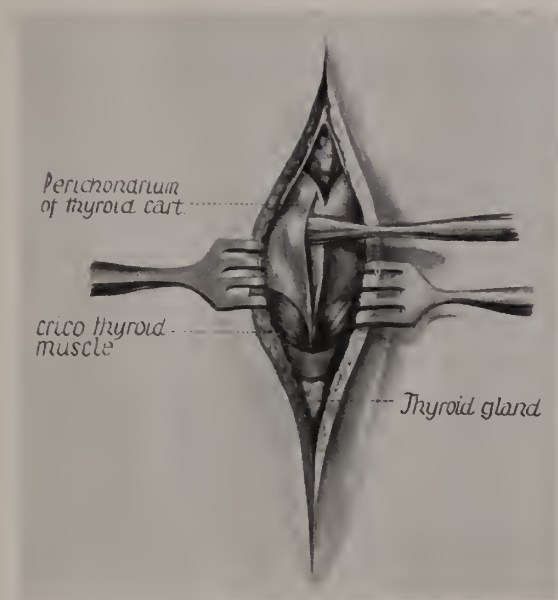


Fig. 1.—Initial incision for close dissection laryngectomy. Instrument shows separation of perichondrium from thyroid cartilage.

mirror examination, by watching the progress of a questionable lesion, is a fallacy that may cost a larynx with serious regret. Biopsy of a non-malignant growth in the larynx will not cause it to become cancerous. It will neither disseminate cancer in the larynx when it already exists, nor will it cause metastasis. However, in event an operation is necessary, it is usually better not to delay operation following biopsy. Removal of tissue from the vocal cord should be done with great care and with due regard for securing some of the basal lesion, and,

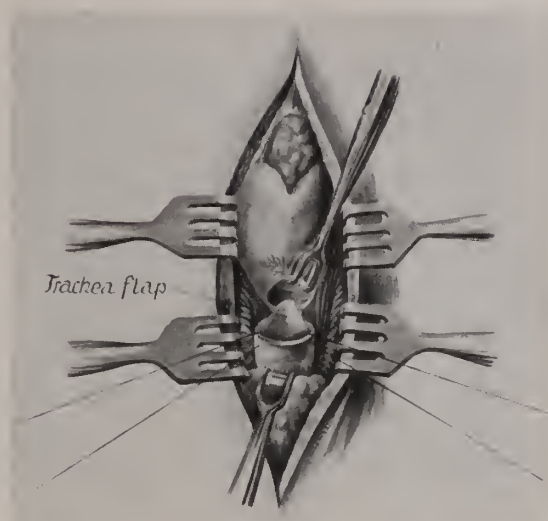


Fig. 3.—Shows larynx severed from first ring of trachea.

when favorable, a portion of normal adjacent tissue should be used for contrast study. In event the histologic report happens to be negative in the face of clinical evidence of malignancy, there should be no hesitancy in repeating the biopsy once or even twice before excluding this disease. If the lesion is large enough to justify the removal of two portions of tissue from different areas of the same growth, this should be done for better histologic grading. Exploratory operation has no place in the diagnosis

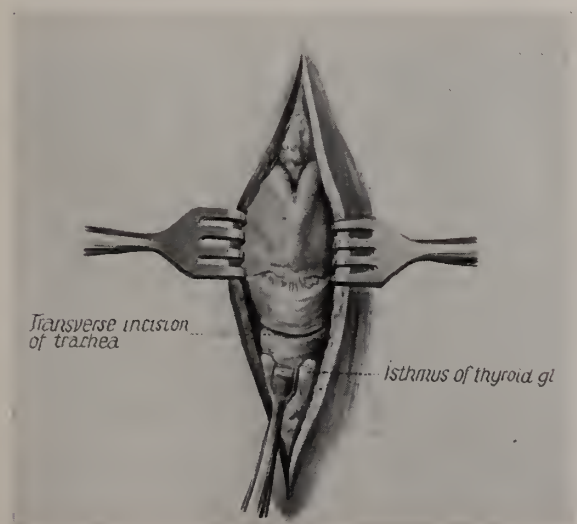


Fig. 2.—Shows anterior and lateral regions of larynx skeletonized.

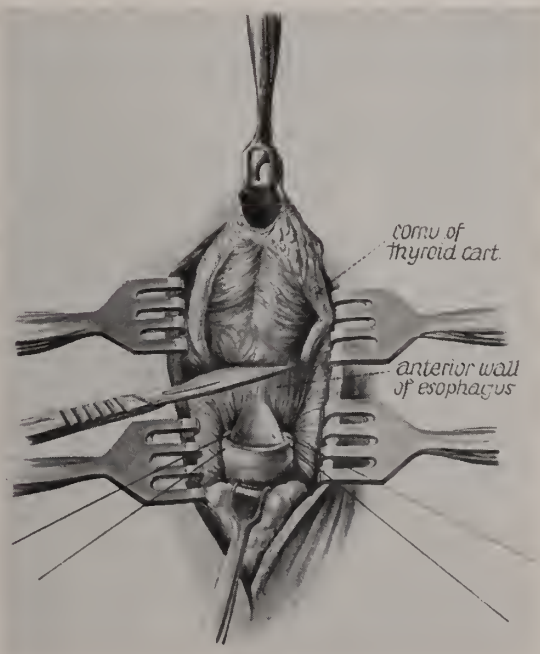


Fig. 4.—Dissecting larynx from esophagus.

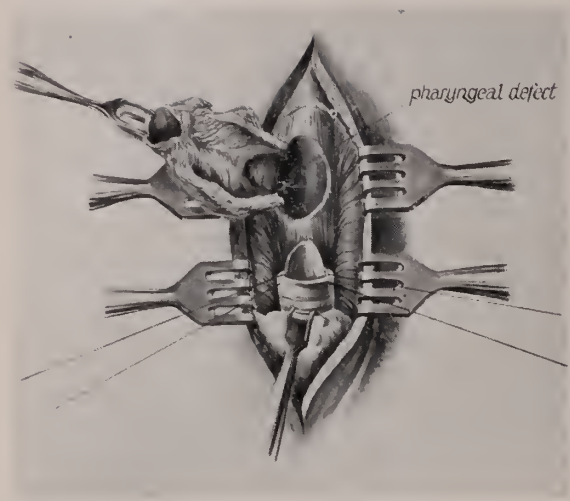


Fig. 5.—Laryngeal dissection completed, showing opening of hypopharynx.

of carcinoma of the larynx. Direct laryngoscopy and biopsy have made this procedure obsolete.

SELECTION OF TREATMENT

There are three methods of treatment for laryngeal carcinoma, namely, laryngofissure operation, total laryngectomy, and radiotherapy. Each method has its indications, though not always well defined. In the main, after giving due consideration to age and general physical condition, there are three important factors which should determine the selection of treatment: (1) the exact location of the growth, whether it is extrinsic or intrinsic; (2) the extent or stage of the lesion, and (3), the degree of malignancy.



Fig. 7.—Operation complete.

It is not within the scope of this paper to discuss the finer details pertaining to these three findings, though it is desirable that they be enlarged upon in a general way.

The anatomic classification of intrinsic and extrinsic lesions of the larynx is not definitely settled; however, it is generally recognized that if a lesion is situated above the ventricular band, or so-called false cord, it is considered "extrinsic", and if the lesion is located below this area it may be classed as "intrinsic".

Having classified the location of the lesion, one must then estimate the extent or stage of the growth.



Fig. 6.—Method of suturing hypopharyngeal defect. Feeding tube shown in situ.

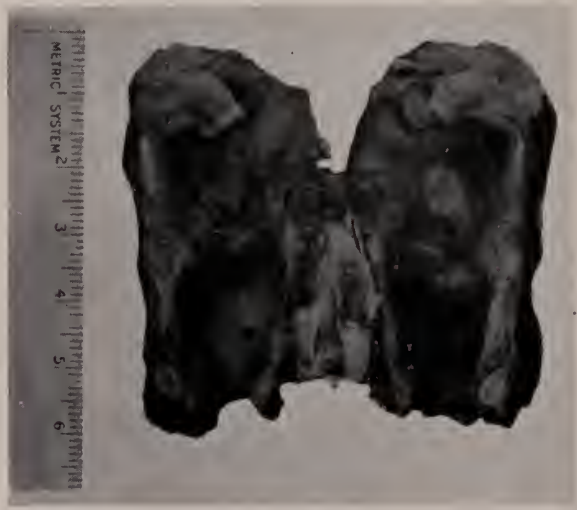


Fig. 8.—Interior view of larynx after removal, showing bilateral papillary carcinoma.

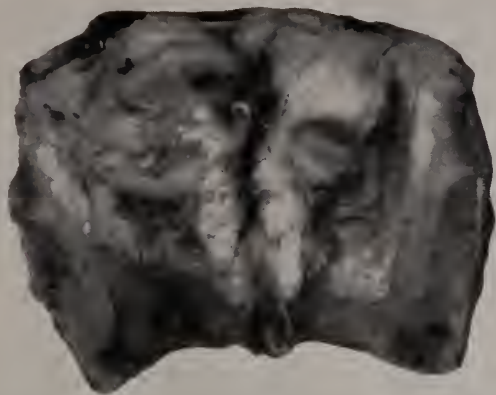


Fig. 9.—Larynx removed, showing carcinoma of subglottic region on both sides.

This can not always be done with the laryngeal mirror. Direct inspection is frequently necessary before proper evaluation can be made.

According to many pathologists, cell grading is largely arbitrary; the same growth may demonstrate grade two in one area of the lesion, and grade three or four in another area. It is also stated that the same growth may show a different grade of cells at one period, and that another grade of cells may be demonstrated at a later period. For these reasons some clinicians are little influenced by the grading report in the management of laryngeal malignancy.

LARYNGOFISSURE

In brief, this operation is chiefly indicated in patients with laryngeal malignancy when the lesion is confined to the anterior one-half of a vocal cord,

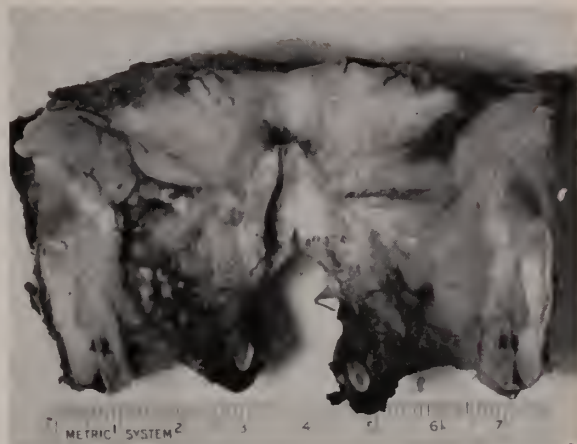


Fig. 11.—Interior of larynx removed, showing carcinoma involving left cord and subglottic region.

or to the anterior third of both cords. A lesion of a cord advanced sufficiently to involve the arytenoid joint is usually unsuitable for this operation, yet there are some finer decisions that may be made between these invaded areas in certain cases, which time will not permit discussing at this moment.

As a rule, a lesion situated in the confines suitable for a laryngofissure operation is, in the large majority of instances, grade one or two. This type of growth is not highly malignant, it extends slowly, and it rarely invades the lymphatics early. This operation merits few immediate hazards. In eighty per cent of properly selected patients, it will save life and leave a voice rarely impaired beyond a rough hoarseness. This procedure consists of approaching the larynx through a mid-line incision of the neck, and splitting the thyroid cartilage with specially devised shears, or a motor driven saw, depending upon the degree of ossification of the cartilage, and

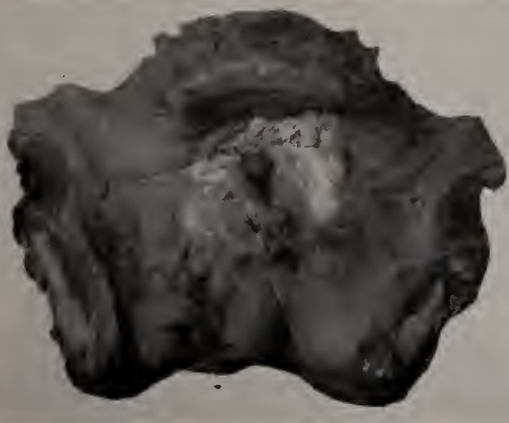


Fig. 10.—Larynx removed, showing carcinoma, grade 2. Extensive invasion of anterior commissure.

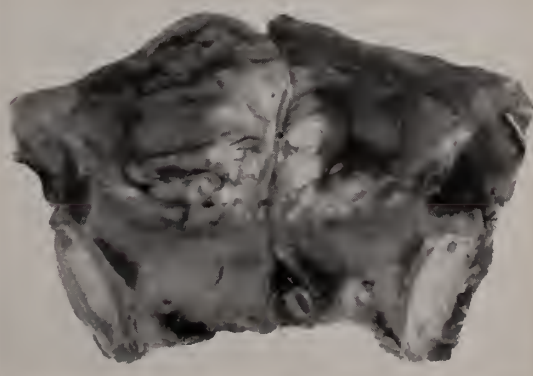


Fig. 12.—Larynx removed, showing polypoid carcinoma of grade 2, involving both vocal cords.

location of the growth. The lesion including the cord is removed by subperichondrial dissection, taking pains to get well beyond the margin of growth. Some operators prefer a pre-operative tracheotomy, whereas others deem this unnecessary. The external wound is usually healed in a week, though it may require four to six weeks for complete epithelization of the inner surface.

LARYNGECTOMY

Total extirpation of the larynx is attended by less serious complications than formerly. Preoperative

intrinsic lesions, before metastasis has taken place, are frequently good risks for a wide dissection operation. Extrinsic lesions, moderately advanced, which are highly malignant, are probably unsuitable for any type of laryngectomy. Extrinsic lesions with glandular involvement should be considered inoperable.

Laryngectomy may be done in either one or two stages, however the former is the one chiefly practiced today. Avertin and ether may be used, though many operators prefer infiltration anesthesia.



Fig. 13.—Post-operative wound, showing large tracheal opening, three months after operation. Use of laryngectomy tube unnecessary.



Fig. 14.—Appearance of wound eight weeks after laryngectomy, narrow tracheal opening requiring use of laryngectomy tube.

attention to oral and nasal infections, improved surgical technic, and meticulous post-operative care should be given credit for this.

Laryngectomy is indicated in cases presenting intrinsic lesions too far advanced to risk a laryngofissure operation, and in selected extrinsic lesion. Here again, in each given case one has to estimate the extent, location, and cell grading, before making a definite decision. However, as long as the growth is confined to the inner laryngeal box, regardless of the degree of malignancy, a close dissecting type of laryngectomy is the method of choice. Early ex-

The technic consists mainly of a single mid-line incision, instead of the T-shaped flap pattern, which was once so popular. The hyoid bone is not removed unless a wide dissection is required. It is thought best to avoid this when feasible, because the muscle structure of the neck is less disturbed and a better reinforced pharyngeal closure can be made with the ribbon muscles. The subperichondrial stripping after the method of Crowe and Broyles, and the preservation of a tracheal flap when practicable, are refinements which tend to lessen a possible pharyngeal fistula. A narrow mid-line opening and close dissection are advantageous in the prevention

of shock, trauma, and retarded healing. However, in event the lesion is extrinsic either by extension or origin a wider dissection operation is often necessary.

The immediate post-operative care of a laryngectomized patient is almost as important as the technic of the operation. Specialized nursing is essential and the nurse should be made to realize the importance of her part in the patient's recovery. The physician should not relegate the dressings or other

account of the cough reflex, opiates should be strictly forbidden.

IRRADIATION

Until we have better criteria, the use of radiation therapy for laryngeal malignancy should be based upon the following findings: the location of the lesion; the fixation of the invaded tissues; and the histologic cell grading.

Coutard divides cancer cells into two main groups, namely, differentiated and undifferentiated. He states, "cancers composed of undifferentiated cells are treated successfully by radiation. Because of their tendency to disseminate, they are not biologically operable." He also states, "cancers composed of differentiated cells are in the domain of surgery, and usually are not curable by radiation because of the intimate connection between muscle cells and carcinoma cells."

In reviewing the literature, there seems to be a marked difference of opinion as to the relationship between histologic structure of the lesion and radiosensitivity. Cutler states, "Since the property of radiosensitivity is a matter of degree and is so intimately related to the efficiency of treatment, it is impossible to draw a fine line of division between radiosensitive and radioresistant tumor."

An intrinsic lesion invading the muscle structure with fixation is readily sterilized by irradiation without permanent damage to the surrounding normal tissue.

Carcinoma of the extrinsic larynx of grade four is usually more suitable for irradiation. However, when there are instances in which surgery is justifiable, irradiation should be used as an adjunct.

High grade lesions, manifesting cervical metastasis, should be treated by irradiation alone. Low grade intrinsic lesions, with cervical involvement, are usually inoperable, though surgical measure may be tried in conjunction with irradiation.

Professional Building.



Fig. 15.—This patient preferred the use of an artificial larynx.

details to the resident. The tracheal tube must be kept clear at all times, and the abundant secretions must not be allowed to enter the lungs any more than possible. Concentrated liquids are given at intervals or by the drop method through the feeding tube. On

INTESTINAL IMPLANTATION WITH LACTOBACILLUS ACIDOPHILUS BY THE USE OF BACILLUS ACIDOPHILUS MILK.*

J. D. WILLIS, M.D.,
Roanoke, Virginia.

Ernst Moro, a German investigator, in 1900, described a distinctive Gram-positive bacillus as the predominating organism in the intestinal tract of milk-fed babies, which later was called bacillus acidophilus. He also claimed this to be the most prevalent organism in the stools of breast-fed infants. This, however, proved to be untrue, as the claim, in the same year, of Tissier, a Frenchman, that his bacillus bifidus was the predominating organism in breast-fed babies, was confirmed by Cahn, Tissini, Jacobson, and others, and admitted later by Moro.

The bacillus bifidus is the first bacterial implantation of the intestinal tract following birth. The tract prior to birth is sterile. This organism can be grown within four to six hours after birth, and increases rapidly in concentration as full breast feeding is developed. It continues to be the predominating organism until ordinary milk, prepared milk, and mixed diets come into use; then a predominance of lactobacillus acidophilus, which is the new genus for the originally named bacillus acidophilus of Moro, comes into being.

The study of the influence of diet on the bacterial content of the intestinal tract has interested bacteriologists since the earliest days of the science. It is generally agreed that the bacterial flora of childrens' intestines changes as their diet changes. It is also agreed that the intestinal flora of adults may be altered as a result of feeding, but it has not been possible except in rare instances to establish satisfactorily an acidophilic flora by diet alone.

Because of an observation on the part of some of the earliest workers in bacteriology, that there was a mutual antagonism between many acid-producing bacteria and the putrefactive ones, it was suggested first by Escherich, in 1887, that possibly intestinal putrefaction could be combated by adding acid-forming bacteria in conjunction with carbohydrates to the diet of those who suffered from the condition. He proposed, in this way, the use of bacillus lactis aërogenes. Quincke, in 1898, suggested in a similar way the use of yeasts—odium lactis. In 1900, Brud-

zinski obtained favorable results by feeding to infants suffering with fetid diarrhea pure cultures of bacillus lactis aërogenes. Metchnikoff, in 1906, felt that much of the failures of therapy were due to the insufficient powers to produce acid by the germs which had been previously used and, in searching for more powerful acid-producers, suggested the use of bacillus bulgaricus which had been isolated from milk in 1905 by Massol and Cohendy. It was found to actively produce lactic acid in milk and was completely lacking in pathogenicity. In this form and in broth culture he and his successors used, and have continued to use to the present time, the bacillus bulgaricus to excellent therapeutic advantage.

Kendall, in 1910, presented the first American paper on the relationship of the lactobacillus acidophilus and kindred bacteria. In spite of this and many subsequent papers, there is still some confusion in the minds of physicians as to the differences between the lactobacillus acidophilus and lactobacillus bulgaricus. It is a proven fact, however, that the appearance of the growing colonies differ characteristically, and it is also fact that implantation in the intestinal tract can be obtained by feeding lactobacillus acidophilus, whereas it cannot in feeding lactobacillus bulgaricus.

In order to obtain a high degree of implantation with the lactobacillus acidophilus it is necessary to feed the culture in large amount, which is best done by the use of milk culture with or without addition to the diet of lactose or dextrose or by feeding a super-concentrate of the organism. Of course, it is understood that implantation cannot be secured except by feeding viable organisms. When one realizes that more than one-third of the dried fecal content of the bowel from an adult is due entirely to bacterial growth, it can be readily understood that many toxic products which develop as a result of such bacterial growth may be responsible for discomfort in an individual. The predominant organism is the colon bacillus, and it represents approximately 95 per cent of the accumulated growth. The fact that the lactobacillus acidophilus is present in adults in very small numbers, is well proven by the fact that they

*Read before the Roanoke Academy of Medicine, December 2, 1940.

readily appear in considerable concentration when lactose or dextrose is fed in liberal amounts.

My interest was aroused in regard to acidophilus feeding after hearing a paper on the transformation of the intestinal flora by Dr. C. C. Bass, of Tulane University, in 1922. He stated that, after feeding acidophilus milk with or without the addition of lactose, the acidophilus bacillus will multiply to the extent that in many instances no other type of organism can be found in the examined stools. My first acidophilus culture was obtained from Dr. Bass in 1922, this being his strain I. F. 15, corresponding to the strain R. J. of L. F. Rettger, from whom he had originally obtained it. Instructions given by him as to the continuation of the stock culture were carried out, and his instructions for the preparation of the acidophilus milk for feeding were also carried out for a considerable time. At a later time, I secured a commercial broth culture which was used as a stock for making the milk culture by the patient in his own home. Proper temperature for incubation was obtained by the use of thermos bottles. While this type of acidophilus milk served me well in many cases, it was far from being satisfactory or dependable.

It came to my attention about two years ago that the Council of Pharmacy and Chemistry of the American Medical Association had defined a suitable acidophilus milk as one containing one million living acidophilus bacilli per cc. at the time of consumption. This seemed to me to be a very low content to provide a quick transformation of the intestinal flora without consuming an excessive amount of the milk. I then decided to see if a satisfactory acidophilus milk could be developed in Roanoke under laboratory control by one of the operating dairies; so I approached Mr. W. C. Miller, in charge of the laboratory of the Garst Brothers Dairy, who was most receptive to the idea and has worked faithfully with me in this endeavor. We tried making the milk from commercial acidophilus cultures, most of which proved to be unsatisfactory for our purpose.

More than a year ago Mr. Miller was able to secure a super-concentrate of the bacillus acidophilus in semi-paste form, produced by the Farr Laboratory, at Kalamazoo, Michigan, the use of which had been advocated as an addition to sweet milk to produce a sweet acidophilus milk which would give a concentration of two hundred million living bacilli per cc. of milk. The analysis of the super-concentrate

showed one hundred billion bacilli per gram. By the addition of two grams of this product to a quart of sweet milk, a definite acidophilus flavor could be detected, and the milk would contain two hundred million bacilli per cc. of milk, this being twice the minimum suggested strength of the Council of Pharmacy and Chemistry of the American Medical Association.

At my suggestion, Mr. Miller began to experiment with the addition of the super-concentrate in varying amounts to whole milk, followed by incubation at slightly differing temperatures and for varying periods of time. We hoped by this procedure to find a standard formula for producing a high concentration acidophilus milk and yet have a palatably sweet taste. He found that the addition of 4.5 grams of the super-concentrate per quart of whole milk, incubated at one hundred degrees F. for five to six hours, produced a most palatable, thick, and comparatively sweet acidophilus milk, which, according to the analysis made of this product by the Farr Laboratory, has an acidophilus count of eight hundred million to one billion bacilli per cc. This shows an increase of 100 per cent or more in the number of bacilli during this short period of incubation, without undue development of other acid-producing organisms which result from long incubation. This product has been rated by the Farr Laboratory as a very superior acidophilus milk. I am glad to say that this milk is now available to the profession as a distribution product of the Garst Brothers Dairy.

Acidophilus feeding with the aim of transforming the intestinal flora should not be looked upon as a special treatment to the exclusion of other forms of treatment, but rather as an aid; although I can assure you that where putrefactive organisms are to be controlled, in many instances it brings complete relief although no additional treatment is given. Ten to fourteen days are required when one quart of acidophilus milk is taken per day to bring about a 50 per cent to 60 per cent implantation and four to six weeks to effect a 90 per cent implantation. The implantation can be hastened by giving small doses of milk of magnesia daily as a mild laxative, also by adding lactose or dextrose to the diet. Should a continuous implantation be desired, it is necessary to continue the feeding regularly, because, if discontinued, the flora will gradually revert to its former state.

The earlier use of acidophilus feeding was in

treating constipation and mucous colitis. It has a definite field of usefulness in these conditions. It was also used early to excellent advantage in controlling distention in typhoid fever.

I have found its use to give great relief from the distress of abdominal distention associated with many conditions. In the treatment of toxemic conditions of intestinal origin it has been of great help to me, such as malaise, lassitude, headache, neuroses, and toxemic convulsions. I have seen great relief come from its use in distention associated with infections and debilitated states. The heart is greatly relieved in myocardial decompensation from the pressure of abdominal distention by acidophilus feeding, which is often very spectacular indeed. I am now using the feeding as an aid in combating intestinal toxemia in the treatment of arthritis and am hopeful of benefit in this field. It should be, in my judgment, of advantage in the preparation of a patient

for surgery, especially where operative work on the gastro-intestinal tract is to be done; also, it should be of help in reconditioning the intestinal tract following surgery. I have been unable to use acidophilus milk with patients who are allergic to milk. Acidophilus feeding can be given them satisfactorily, however, by using the super-concentrate in salads and other foods which are not served hot. Some physicians have used a 2 per cent fat acidophilus milk in preparing formulas for infant feeding with most excellent results.

Now that we have available in Roanoke a superior quality acidophilus milk, and being convinced of its value in the treatment of many conditions, I urge you to use it where indicated. Your interest in this milk will continue to make this fine product available to the profession and Roanoke.

Medical Arts Building.

ABNORMAL SEXUAL REACTIONS.*

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The general attitude toward the individual showing abnormal sexual reactions has changed very little since the time of Justin whose code decreed death for those accused of witchcraft or homosexuality. The writings of Freud and Adler were accepted in part as an explanation of sex being the basis of certain forms of behavior, yet the form of treatment of overt sex acts remained the same. Penta, the nineteenth century Italian psychiatrist, pointed to "impotence" as the sole cause of sexual perversions and at the present time the tendency is to accept this explanation or to base the cause of such a condition entirely upon the failure of complete biological development in the individual. If such a defect is the only accepted explanation of abnormal sexual reactions that are encountered, it means a reversion to the form of treatment advocated by Justin and the refusal to consider the theories of Freud, Adler and others. The entire subject of sex is still considered in a Puritanical

manner by the average layman and it is difficult to bring about an unemotional discussion. In dealing with children we find that considerable progress has been made in correcting sex habits but we always find lurking in the background the same antiquated ideas, that often are deeply instilled into the child by adults in an effort to "produce a cure by fear". Sometimes this method apparently produced a cessation of the abnormal sex habit but only for a brief period and in later years there was a more serious exacerbation.

The treatment of sex disorders in children has helped to disprove the idea that it is always a biological defect because excellent results are obtained and the children find normal sexual outlets.

In this way parents have become educated to understand the role of sex in behavior of the children and also themselves. The sex habits of children are usually much simpler to manage than those of adults because the "drives" are less complicated. The incidence of sexual abnormalities among children is high and yet there is no alarm about this situation because we expect them to pass through a homosexual period about the time of adolescence.

*Read before the Junior Clinical Club, March, 1940, and the Neuropsychiatric Society of Virginia, at Radford, Va., June 19, 1940.

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Frequently, due to external causes, this period is prolonged and attracts the attention of the entire community. Then steps are taken to obtain medical aid in an effort to find the cause. Thus, the condition is managed in a logical manner without undue publicity and threats, with the result that, we hope, further difficulty is avoided.

In dealing with adults the general public and many physicians are not inclined to be logical but seize upon the first suggestion which is usually incarceration in a penal institution. These individuals are dealt with in an impulsive and emotional fashion, the main idea being to remove from the community the offender of morals. This results from the fact that adults frequently assault children and occasionally serious crimes are committed in an effort to obtain sexual gratification but certainly this occurs only in the minority of instances. It is not believed that the "normal" child will become a sex pervert because he was persuaded to participate in such a practice by an older person on several occasions, as the practice soon becomes repugnant and is discarded for more healthy habits. Yet, our object is to save the child from such an experience and help the older person if possible. During the past several months there have appeared in the papers the opinions of many different authorities on this subject advocating some form or other of treatment for individuals whose "sexual drives" were abnormal. The majority recommended placement in a penal institution for several years. As the courts may give a three to five-year sentence, this satisfied the public. Psychiatrists are in accord that this is the worst possible plan and will only return to society an individual more confirmed in perverted sexual practices and who is certain to have difficulty again.

To combat this situation, it is necessary to modify the old theory that all perverted individuals are biologically defective and accept the fact that the condition, in many instances, is psychogenic. This would alter greatly the method of treatment of sexual perverts and return to society many useful people. We want to avoid mistakes made in the past in dealing with sexual matters, as for example, prostitution, in which the attempt to abolish it failed completely. If we are to do constructive work, it is necessary to clarify the present status of adults showing abnormal sexual reactions. Noyes divides these individuals into three groups, as follows,

which include only such conditions as homosexuality, sadism, masochism and exhibitionism:

1. Those whose sex differentiation was never biologically completed. This group shows physical defects such as body conformation or hair distribution resembling that of opposite sex and also the failure of differentiation in psychosexual sphere.

2. Sexual perversion due to fixation or to failure of complete psychosexual development. This is caused by an abnormal parent-child tie which prevents normal transfer of interest to opposite sex, so that the personality does not develop beyond the homosexual stage.

3. Sexual perversion which has same origin as a neurosis of the compulsion type and is often related to some sexual experience in early life.

To these three groups may be added a fourth which would include those individuals who have an underlying psychosis as the basis of the sexual perversion and in which the treatment is directed toward the psychosis instead of the perverted sexual tendencies. Paranoia is an example of this group, although the Freudian theory is that homosexuality is the cause of a paranoid psychosis.

The following cases illustrate the above facts and also the methods of treatment which appeared to be most satisfactory:

- (1).—J. S. The patient was committed to the State Department of Public Welfare as incorrigible when thirteen years of age, in 1934. His father died when he was four years of age and patient was living with his mother. Mother was a chronic alcoholic and said to have syphilis. Conditions in the home were poor and morals bad. On frequent occasions the patient was dressed as a girl and was picked up by older boys to be subjected to sexual abuse. He would obtain money in this way with which the mother used to buy whiskey. The patient was devoted to his mother and tended to imitate her conduct. He was effeminate, interested in dances and talked about being an actor. He was placed in a good foster home and with adequate psychiatric guidance he developed normal sexual desires. He is now in high school and doing well as he has a good insight into the past conduct. Psychological examination showed the patient to be in the average group intellectually.

- (2).—L. H. The patient is a twenty-eight-year-old man who was recently arrested for sexual assault on a young boy and girl. The patient has an

interesting history. His mother separated from the father when he was five or six years of age because of the father's excessive drinking. He was placed with his maternal grandparents and the mother later went to Pennsylvania to work. During this time the mother supported the patient and he depended upon her for the only security he knew. The father visited him frequently but was always disagreeable and would not help him in any way.

At the age of sixteen the patient was placed in a preparatory school but during the first year he was involved with other boys in cashing a forged check. Of the group involved, the patient was the only one sent to an Industrial School where he remained until twenty-one years of age. Here he states he began homosexual practices. He ran away three times from the school but returned each time at the insistence of his mother who was at that time in training as a nurse in Pennsylvania. After leaving the Industrial School he came to Richmond and after a short time was told to leave town because of his homosexual habits. He worked in New York, later in North Carolina, and returned to Richmond. He did not do well as he changed work frequently due to conflicts with others in the offices in which he worked.

Patient states he was engaged twice to be married; the first time he quarreled with the girl and the second girl was accidentally killed. This upset him very much and since this time he has had little interest in other girls. He devoted himself to boys' work whenever possible but had to give it up due to reports from people who knew of his past difficulty. Once the patient attempted to adopt a boy but this failed when the mother found out about his past sexual difficulty. He denied homosexual habits while in New York but stated he does like to be with boys. After his return to Richmond he encountered difficulty by bringing boys to his apartment for sexual practices.

Psychiatric examination showed patient to be alert mentally and friendly. He was mildly grandiose and egotistical. Did not consider the present difficulty serious and believed that he would only be told to leave Richmond again. Even during the time he was waiting for trial he attempted to obtain work in the men's department of a large store and was only concerned about what he considered unfair treatment by a few men in town.

Psychological examination placed him in the su-

perior group intellectually and showed that he was adapted to do artistic work or office work such as accounting.

Physical examination was essentially negative.

The patient was seen by several other psychiatrists and the general opinion was that patient was a sexual pervert and would continue to have further difficulty. The court was inclined to deal with this case severely, that is, sentence him to the penitentiary for a period of from three to five years. After a conference with the Judge it was recommended that patient be sent to the Eastern State Hospital and insulin therapy tried.

Patient remained at the hospital only a short period and no treatment was given due to failure of agreement of opinion concerning his mental status. Finally it was agreed to allow patient to return to New York where he resided for past ten years, provided he did not return to this State again. One year later he married and apparently was doing well. In 1940 he was arrested for stealing some money and was sent to the penitentiary. After a few months in the penitentiary it was realized that he needed hospital care and he was placed in a mental institution.

The indications are that his difficulty may have been avoided if he had remained in the first mental hospital instead of being discharged so quickly.

(3).—J. W. This patient was a white man fifty-eight years of age who was arrested for having sexual relations with a girl eleven years of age. He stated he was drinking at the time and did not realize what he was doing.

The past history is of interest in that patient's wife is said to "run around" much of the time and has little to do with him. His only child, a daughter, was accidentally killed five years ago and this produced a marked change in the patient. He was depressed, lonely, and would drink excessively. He attempted suicide while being studied and was treated at the Memorial Hospital. There was no evidence of delusions or hallucinations at this time. He was fearful, apprehensive and tearful most of the time. There was a history of patient being treated for syphilis some years ago but blood Wassermann was negative.

In view of the patient's depressed state and attempt of suicide he was committed to the Eastern State Hospital for further treatment.

(4).—B. K. The patient was a white man thirty-

four years of age who was reared in a good home in Richmond. Father died in 1932, and mother died several months later of grief. This was a great shock to the patient as he had always depended upon the mother and was devoted to her. Patient is married, has nice home, a devoted wife and two children. Only recently has his business been good enough for him to seek a few pleasures. One night he visited a home to give an estimate and when he returned to his car a sixteen-year-old boy asked him for a ride.

They began talking about sexual matters and patient engaged in pederasty. The boy wanted patient to reciprocate but he was disgusted with himself because he had done this and while they were talking the police arrested him.

Psychiatric examination did not reveal any abnormal trends. Patient was tense, mildly depressed and repentant. He could offer no explanation of his conduct and was very much ashamed. His wife could not give any reason for patient's conduct as

there had been no sexual conflict.

The only explanation seemed to be possible mother fixation and lack of emotional outlets in the past. The boy was found to have gonorrhea and to be retarded intellectually.

Cooperation of the court was obtained and under psychiatric treatment patient gained an insight into his condition. During past three years he has adjusted well and had no difficulty.

CONCLUSION

The above cases are to illustrate the complicated situations that are encountered in the study of abnormal sexual reactions and that each case requires painstaking analysis. A hasty opinion only tends to cause further difficulty for both the individual and society. An early recognition of the psychic factors producing such behavior and adequate psychiatric treatment are conducive to rehabilitation of the individual in society.

Professional Building.

QUININE AS A PROPHYLACTIC AGAINST INFLUENZA

A Study of 6,500 Quinized and 6,500 Non-Quinized Individuals during the Influenza Epidemic of January, 1941.

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For a good many years writers on the subject have reported the efficacy of various forms of quinine preparations as a prophylactic during epidemics of influenza. Most of the reports dealt with the vasodilatory effect of the drug. Some of these studies have been very good but there was never a large enough series of cases studied together with controls to lend weight to these data.

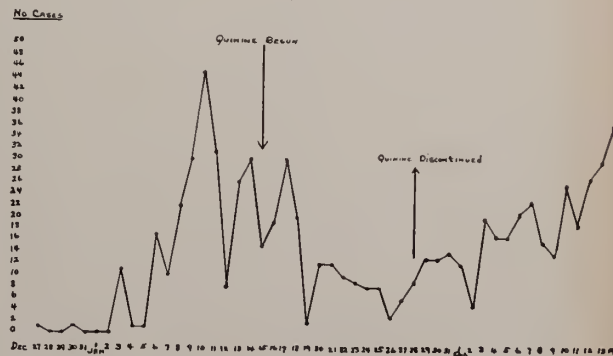
It has but recently been shown by Showalter¹ that quinine causes a definite leucocyte response. This is exactly what is needed to increase the body defenses during the initial stages of influenza when a leukopenia exists.

At the Radford Ordnance Works, at Pepper, Va., a smokeless powder plant is being constructed by the Mason and Hanger Company for the Hercules Powder Company as part of the National Defense Program. The emergency called for as little lost time from work as possible and when the influenza epi-

demic started we began to search for some means of prophylaxis aside from the usual health and hygienic measures.

For want of anything better to offer, we decided to issue to 6,500 employees a two weeks' supply of quinine sulphate tablets each 5 grains—14 tablets in a package (one for each day) with instructions that

Graph No. 1.—Total Reported Cases of Influenza.



one tablet be taken each day before going to work. To each of the remaining 6,500 employees 14 tablets of soda bicarbonate each 5 grains were issued with similar instructions.

It will be seen from Graph No. 1 that there was a definite decrease in the total number of cases within 48 hours after quinine was started and that there was a gradual rise in the number of cases when the quinine was discontinued two weeks later.

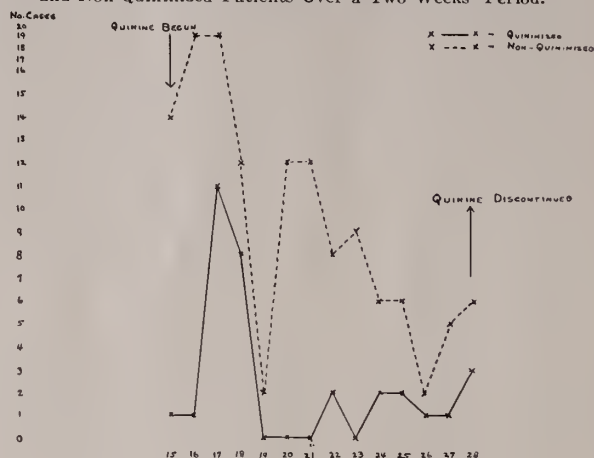
A differential study of the number of cases in the two groups is shown in the table below:

January	Quinized	Non-Quinized
15 -----	1	14
16 -----	1	19
17 -----	11	19
18 -----	8	12
19 -----	0	2
20 -----	0	12
21 -----	0	12
22 -----	2	8
23 -----	0	9
24 -----	2	6
25 -----	2	6
26 -----	1	2
27 -----	1	5
28 -----	3	6
TOTAL -----	32	132
	19.6%	80.4%

This is illustrated in Graph No. 2.

Summary: (1) A study of 6,500 individuals taking quinine and 6,500 controls not taking quinine during an influenza epidemic was made.

Graph No. 2.—Differential Study of Influenza Cases in Quinized and Non-Quinized Patients Over a Two Weeks' Period.



(2) During the period of quinization the number of cases waned only to rise again when the quinine was discontinued.

(3) A differential study reveals that there was only one-fourth as many cases of influenza in the quinized as compared with the non-quinized group.

NOTE: A study of the value of the newly discovered influenza vaccine is now being undertaken at the Radford Ordnance Works.

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BIRTH INJURIES FROM THE VIEWPOINT OF THE OBSTETRICIAN.*

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It is the general impression that birth injuries have increased in recent years. Conditions prevailing during the past ten years, such as a demand for shorter and painless labor, the abuse of anesthetic and oxytocic drugs, and a distinct increase in the necessity and vogue of resorting to operative methods of delivery give some justification for these impressions. Because of changes in our economic and social environment, the elderly primipara with her labor complications is encountered more frequently today

than formerly.

It is difficult from the study of available statistics to determine whether there is an actual increase of birth injuries. The fact that there is a seeming increase can be attributed to more accuracy and care in the filling-out of birth and death certificates and to more accurate diagnosis of the cause of neonatal morbidity and mortality, including careful autopsy study. Statistics compiled by the Children's Bureau of the U. S. Department of Labor show that 52.4 per cent of infant deaths can be attributed to natal and prenatal causes of various kinds, and from 5 to 10

*Read by invitation before the Richmond Pediatric Society, March 21, 1940.

per cent of all deaths in white infants under one year are due to birth injuries. This percentage is on the increase because other causes of infant mortality

TABLE I.—PER CENT OF BIRTHS BY AGE OF MOTHER AND MORTALITY RATE FROM BIRTH INJURIES 1929-1934
(after R. A. Strong)

SECTION	MOTHERS			BIRTH INJURIES
	UNDER 25	25-34	35-OVER	
New England	35.8	46.1	18.0	6.5
Middle Atlantic	38.0	46.8	15.2	5.5
East North Central	40.3	44.1	15.6	5.1
West North Central	38.4	44.8	16.8	4.8
South Atlantic	43.6*	41.5*	15.0*	4.2*
East South Central	45.1*	39.8*	15.0*	3.3*
West South Central	46.4*	39.7*	13.9*	3.6*
Rocky Mountain	43.8	41.0	15.2	4.3
Pacific Coast	45.2	44.3	10.4	4.6

*For white population only.

are decreasing. In Table I, which shows the percentages of births by the age of mothers, it is seen that where the mortality from birth injuries is highest, the proportion of births is greater in the older age groups of mothers. Although we have no information regarding the parity of any of the three groups, we may assume that the proportion of primiparae is greatest in the group under 25 years. From this it would appear that age of mothers, rather than parity, is of prime importance as a factor in the prevention of birth injuries.

whether these newer methods are accomplishing this end. A very careful study of the effects of various methods of delivery on fetal and neonatal mortality by H. C. Miller of Yale shows that the lowest mortality occurred in the series delivered by low forceps, and the prognosis is better in low forceps delivery than in spontaneous birth. The highest mortality occurred in the breech extraction and in the version and extraction group. The mortality in the cesarean section group closely approximates that of the mid and high forceps group. Before drawing conclusions, one must take into consideration the probable fetal and maternal complications that led to some of the operative deliveries. Nevertheless, it would appear from Miller's studies that an infant, whether full term or premature, has the best chances for survival when delivered by low forceps.

Obstetrics has participated in the general scientific advances that have been achieved in Medicine and Surgery. Improvements in technique have lessened the danger of various operative procedures and it follows that the indications for operative procedures in the interest of the child and the mother have increased. In the hands of experienced and trained men who fully understand the indications and contra-indications for operative interference and who possess the skill to perform operative maneuvers, the prognosis for the mother and infant is increasingly favorable. The great majority of deliveries, however,

TABLE II.—TOTAL MORTALITY, STILLBIRTH, AND NEONATAL, ACCORDING TO METHOD OF DELIVERY
(H. C. Miller)

TYPE OF DELIVERY	TOTAL BIRTH	DEATHS					
		TOTAL	PER CENT	STILLBIRTHS	PER CENT	NEONATAL	PER CENT
Spontaneous	1,844	43	2.3	20	1.0	23	1.2
Low forceps	580	8	1.3	6	1.0	2	0.3
Mid forceps	200	10	5.0	9	4.5	1	0.5
High forceps	19	2	10.5	2	10.5	0	0
Breech extraction	76	14	18.3	10	13.1	4	5.2
Version and extraction	76	25	32.3	18	23.6	7	9.2
Cesarean section	415	25	6.0	7	1.6	18	4.3

The recent trend toward the more frequent employment of operative obstetrical procedures and the widespread employment of analgesic and anesthetic agents is due to: First, an honest effort to alleviate, in so far as possible within the bounds of safety, the suffering incident to labor; Second, to return the mother after the birth of her child to her place in society and in her household in the best possible physical and mental condition; and, Third, a greater emphasis on obtaining a living and healthy infant. Opinion is sharply divided among obstetricians as to

take place in the home or in hospitals where the Obstetrical Service is not rigidly supervised, and the majority of women are attended by physicians who are not primarily interested or specially trained in obstetrics. The use of analgesia and the employment of operative procedures, under such conditions and circumstances, frequently terminates in poor results for both mother and infant. While the attending physician cannot be held responsible for all birth injuries, their frequency and extent are largely influenced by his judgment and skill. The uncoopera-

TABLE III.—PREMATURE INFANT MORTALITY ACCORDING
TO METHOD OF DELIVERY
(H. C. Miller)

TYPE OF DELIVERY	LIVE BORN PREMATURE		PER CENT
	PREMATURE INFANTS	INFANT DEATHS	
Spontaneous	119	12	10.0
All forceps	28	1	3.5
Breech Extraction and Ver- sion and Extraction	24	3	12.5
Cesarean section	44	12	27.7
Total	215	28	12.8

tive or ignorant woman who fails to give the physician an opportunity to properly study and manage her case until she is well advanced in labor, and apprehensive meddling relatives, however well-meaning their intentions, by sometimes driving the physician to pursue a course contrary to his better judgment, must bear some of this responsibility.

Almost every organ or structure of the body can be more or less severely traumatized incident to birth: the eyes and mouth in face presentation; the rectum, testicles, or vagina in breech presentation; the abdominal viscera, chest, spinal column, shoulder girdle, extremities, cranium, and cranial contents in breech delivery; and the cranium, cranial contents, neck, shoulder girdle, and upper extremities in vertex presentation. During abnormal delivery it is often impossible to avoid the use of force, which is dangerous to the integrity of various fetal structures, and this sometimes becomes necessary in order to save life. However, attention to certain details can reduce these dangers to a minimum. In a paper of this scope it is only possible to discuss in a general way the prophylaxis of birth injuries.

General Considerations: Proper prenatal care often enables the physician to evaluate the "obstetric prognosis" in a given case and in many instances to determine before the onset of labor how a given case should be managed. The relationship between size of the fetal head and maternal pelvis can be determined. Position and presentation, as well as unfavorable conditions of the soft parts which may unfavorably affect the course of labor, can be determined in advance. Since fetal morbidity and mortality is considerably greater in breech than in vertex presentation, and since it is difficult to judge cephalopelvic disproportion in breech presentation, an attempt should be made to convert breeches by external version before the onset of labor. This procedure is

not without some danger in itself and should never be done under anesthesia.

Recent work in the treatment of hemorrhage and hemorrhagic tendency by administration of Vitamin K or its synthetic substitute deserves our consideration. It is quite possible that in the near future we shall regard the routine administration of this substance during the last few weeks of pregnancy as important prophylaxis against hemorrhage incident to the trauma of labor, and its administration will be as much a matter of routine as is the present administration of calcium.

Analgesia and Amnesia: It is generally conceded that *profoundly deep* amnesia and analgesia induced by morphine, scopolamine, barbiturates, paraldehyde and other agents now in general use have a depressing effect on fetal respiration and circulation and increase the necessity for operative delivery by depressing the normal expulsive efforts of the second stage of labor. Very satisfactory results can be obtained by using moderate doses of these drugs if they are given very early in the first stage of labor, the patient isolated in a darkened room and protected from all unnecessary external stimuli. Moreover, it is our opinion that moderate analgesia and amnesia tend to shorten the first stage of labor. Analgesic drugs should be given early enough in labor so that their effect is beginning to wear off by the time delivery is imminent. These drugs should be used very sparingly, if at all, in premature labor because of their more profound depressing effect on the premature infant.

Conduct of Labor: Either a long hard labor, or a rapid, stormy, precipitate labor may injure the infant. In the presence of very strong uterine contractions, sometimes induced by pituitrin, the fetal head is rammed through a resistant and unyielding cervix and perineum with such haste and force that there is no time for moulding of the head or adjustment of the intracranial circulation between contractions to take place, and tears in the tentorium, rupture of engorged blood vessels, or petechial hemorrhage throughout the brain occur. This is particularly likely to occur in the premature, syphilitic infants or in the presence of a hemorrhagic diathesis. Extremely hard contractions closely following one another without a period of relaxation of the uterus should be controlled by sedation if possible, but deep anesthesia is more often necessary. If the

perineum is resistant a perineotomy should be done as soon as the head reaches the pelvic floor. Unnecessary as it might seem, this is particularly important in the case of small premature infants.

We must differentiate between the effect on the infant of prolonged labor of mild infrequent uterine contractions and prolonged labor of hard frequent contractions. It is only in the latter circumstances that fetal injury may occur. Particularly after the membranes have ruptured intra-uterine pressure is much greater than intravaginal pressure and that part of the head presenting in the birth canal is subjected to tremendous negative pressure. Under these conditions a caput succedaneum develops, which is an engorgement and edema of the soft tissues of the scalp. Schwartz and others have shown that the negative pressure exerts a similar action on the soft tissues on the opposite side of the cranial bones and produces an "internal caput" with edema, engorgement of blood vessels which may rupture, and petechial hemorrhage throughout the brain substance. Particularly in cephalo-pelvic disproportion *excessive* moulding of the skull takes place. Lengthening of one diameter is, in general, compensated by a corresponding shortening of another diameter. It has been shown that the chief function of the falx during birth is the prevention of excessive elongation of the longitudinal and vertical diameters during the required moulding. Dura tears are, therefore, encountered in cases of exaggerated moulding, in contracted pelves, and in instances of rapid delivery.

When signs of fetal distress develop prompt action is necessary. If this distress is of an asphyxial nature due to interference of circulation through the cord or premature separation of the placenta, delivery by the quickest means with due regard for the safety of the mother must be accomplished. It is in complications of this type that the infant is sometimes injured in an effort to save its life. When fetal distress develops as a result of other factors, such as tetanic uterine contractions, or cerebral congestion and edema accompanying impaction of the head with excessive caput and moulding, immediate delivery is contraindicated. The infant is in no condition to stand the extra strain and trauma of an operative delivery through the birth canal. The conditions which brought about the fetal distress must be temporarily relieved by breaking-up the uterine contractions and relieving pressure on the head. When the condition of the fetus has improved, as indicated by improve-

ment in the heart sounds, delivery can be effected with greater safety. We must sometimes anticipate fetal distress before it develops and terminate labor while the infant is still in good condition. The second stage of labor should not be prolonged in the presence of good uterine contractions unless progress is being made. Perineotomy and low forceps delivery will shorten the second stage of labor and in the case of a rigid perineum will sometimes protect the fetal head from several hours of severe pressure.

Influence of Delivery Technique on Birth Injury: Most infants are delivered too rapidly. The necessity for haste once delivery has actually begun has been much over-estimated, and it is probable that more infants are injured as a result of haste and brusque methods than succumb as a result of what appears to be delay in extraction. In forceps operation the probability of injury is in relation to the station of the head in the birth canal. Otherwise, the danger of injury to the head depends largely upon the proper application of the instrument which, in turn, depends upon the accuracy of diagnosis of position. A cephalic application, i.e., with the blades along the transverse diameter of the head, should always be made. When the head is high in the pelvis and is not well flexed, as is usually the case at the inlet, this is frequently impossible. When the head is grasped in its longitudinal diameter with one blade over the face and one over the occiput, not only the soft parts of the face are severely traumatized but the falx and tentorium are put under severe strain and frequently rupture. This application is usually due to a mistaken diagnosis of position. Diagnosis of position is often difficult in the presence of a thick caput or excessive moulding which obscures the suture lines and fontanelles. Palpation of an ear will indicate the direction of the occiput. In posterior position of the occiput accompanied by considerable moulding in which the head has accommodated itself to the shape of the birth canal, rotation to the anterior position subjects the cranial contents to severe strain. Under such conditions the head is best delivered with the occiput posterior.

It is possible to traumatize the brachial nerve roots with the tips of forcep blades that are too long or designed with an exaggerated cephalic curve. When the blades are too short or not applied deeply to the sides of the head and when unavoidable compression takes place, the facial nerve is often injured.

In head presentation difficulty in delivery of the

shoulders occasionally results in injury to the brachial nerve roots, sterno-mastoid muscle, and fracture of the clavicle. This is the result of pulling the head downward with lateral flexion of the neck, with force in order to bring the anterior shoulder under the symphysis. If the air passages be cleared, there is no great need for haste, and pressure on the top of the uterus in the direction of its longitudinal axis will reduce the amount of necessary traction on the head and neck.

The highest percentage of birth injuries occur in breech delivery and extraction following version. Torsion of the body should never be combined with traction. In delivering the shoulders the body should be grasped around the pelvic girdle so as not to injure the abdominal viscera or thorax. Lateral flexion and hyperextension of the spine, particularly the thoracic and cervical portion, in attempts to deliver the shoulders may produce injury to the spinal column and cord. The shoulders are best delivered by Potter's method. The complication of an arm up behind the head in the nuchal position is most likely to occur when the extraction is carried out too rapidly, when the cervix is not completely dilated, and by pressure on the abdomen before the shoulders are delivered. The arm should be freed by pushing the infant's body back up into the birth canal and rotating it from side to side. If this fails, a hand must be introduced into the vagina along side of the head and the arm brought down across the infant's face. In the delivery of the after-coming head, a combination of hyperextension and traction, especially in a lateral direction, carries with it great danger of fracture of a cervical vertebra or injury to the cord. In handling the after-coming head, a modification of the combined Mauriceau-Smellie-Veit method should be tried with caution. Gentle pressure on the head through the abdomen will assist in its engagement and flexion and it should be directed into one of the oblique diameters of the inlet. Care should be used not to injure the mouth, and the finger should be used only to maintain flexion of the head. The tips of the fingers straddling the neck should rest on the clavicles and sternum and should not dig into the supraclavicular fossae where they might injure the brachial nerves. A liberal episiotomy should be done on a rigid perineum. Excessive traction should not be exerted on the neck. The Piper forceps is the safest method by which the head may be delivered as

it does away with the possibility of injury to the neck and brachial nerves.

The Immediate Recognition and Treatment of Birth Injuries usually becomes the responsibility of the obstetrician. Often in the first few minutes after birth it is impossible to differentiate between narcosis, asphyxia, shock, and cerebral and spinal injury. A new born infant whose heart rate is persistently slow is almost always suffering from intracranial injury. Gentle handling is of paramount importance. Many infants have been injured by too zealous and rough attempts at resuscitation. The cardinal principles of immediate treatment are: freeing the air passages, keeping the infant dry and warm, and gentle inflation of the lungs with pure oxygen. Stimulants such as coramine, alpha-lobelin, and adrenalin may be given by way of the umbilical vein. After respiration has been instituted, 10 to 20 cc. of maternal blood should be given prophylactically in every instance of hard labor or prematurity. Vitamin K or its synthetic derivative should be given in order to decrease the coagulation and bleeding time by increasing the prothrombin factor in the blood.

SUMMARY AND CONCLUSIONS

It is difficult to prove statistically whether the incidence of birth injury is increasing or decreasing.

Age of the woman has a definite bearing on fetal mortality and birth injury. The incidence of the elderly primipara is on the increase.

There is an increasing demand and use of deep amnesia in the conduct of labor which increases the necessity for artificial termination of labor. These newer methods in the hands of the inexperienced and unqualified give poor results. Low forceps delivery offers the best prognosis for the infant.

Proper prenatal care in its broadest interpretation should decrease the incidence of birth injury by enabling the physician to conduct the labor along a previously conceived course. Prenatal care should lower the incidence of premature birth.

The frequency and extent of birth injury is largely influenced by the judgment and skill of the physician. More emphasis on obstetrics in undergraduate and postgraduate education is desirable. The current postgraduate educational projects of the Medical College of Virginia, University of Virginia, and the Medical Society of Virginia in this State and similar projects in other states should react favorably upon the incidence of birth injuries.

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ORAL PRIMARY FOCI OF INFECTION FROM A DENTAL VIEWPOINT.*

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The starting point for the foci of infection principle in America came about when Sir William Hunter,¹ of England, made the opening convocation address of the Medical College of McGill University in 1910. Following this, Frank Billings,² in his Lane Lectures at Stanford Medical School, in 1915, brought out the beginning of its widespread application as a working principle in the practice of medicine and dentistry. He adopted the use of the terms focal infection and focus of infection. One of the original associates of Billings was Dr. Edward C. Rosenow, of the Mayo Clinic. Of him it has been said,³ "Fortunately the experimental basis for focal infection is most convincing, due to the brilliant work of Rosenow. This work furnished the needed experimental basis for the concept of focal infection, since it demonstrated experimentally a causal relation of foci of infection to systemic lesions and provided an explanation for many clinical observations." Rosenow,⁴ in a brief summary of his present ideas, has this to say, "Dental foci of infection, even though symptomless, are common cause of systemic disease beyond a question of a doubt; but the need for further consideration of this important problem is still ahead." In the dental field the discovery and the widespread application of the X-ray was no small factor in the evolution of the focal infection principle.

Dr. G. V. Black, whom we call the father of

American Dentistry, made this remark as to what Hunter said in his address at McGill³: "He lashed the dental profession unsparingly for allowing chronic abscesses and other forms of chronic supuration to continue in the mouth. Dr. Hunter called attention to the fact, as it has never been done before, that the foci in the mouth are in the same causal relation to arthritis, nephritis, cholecystitis, endocarditis, etc., as are infected tonsils, or chronic supurations in any other location. Dr. Hunter was especially severe in his denunciation of the habit of placing plates over infected roots, anchoring bridges to abscessed teeth, or teeth with inflamed or suppurating gums, or placing artificial crown on such roots. Any artificial replacement which promotes uncleanness came in for condemnation."

He emphasized the importance of the infection caused by staphylococcal and streptococcal organisms, as distinguished from the purely saprophytic infections in which the mouth abounds.

The micro-organisms found associated with oral sepsis are: Streptococcus group predominating, staphylococcus group, pneumococcus group, bacillus pyocyaneus, fusiform bacillus, and Vincent's spirochete.

Infected teeth and pulpless teeth, in addition to micro-organisms, may contain toxic substances which is possible to cause a state of anaphylactic sensitization which may disappear upon the removal of the tooth.

*Read before the monthly meeting of the Roanoke Academy of Medicine, Roanoke, Va., January 6, 1941.

TYPES OF DENTAL INFECTION AND WHERE FOUND

1. *Periapical Infection.* This type of infection is the most virulent because of inclosure within the bone at the apex of a tooth and usually having no drainage (Fig. 1). Chronic periapical abscesses as a rule

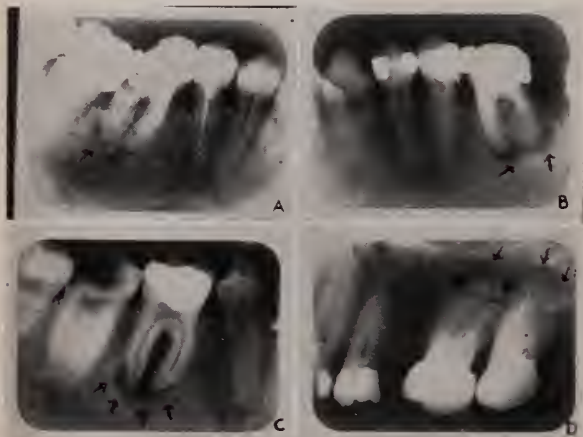


Fig. 1.—Roentgenograms showing chronic periapical infection about pulpless and devitalized teeth.

do not give rise to a single local disagreeable or uncomfortable symptom and easily escape the attention of the patient and dentist. There is usually no pain, soreness, swelling or discomfort, unless the condition becomes acute. It may be the tooth least suspected by the patient and one which has given the least amount of pain. We find patients extremely skeptical regarding the possibility of teeth which have given no discomfort as being sources of infection.

2. *Infection of the Dental Pulp.* A dying pulp or

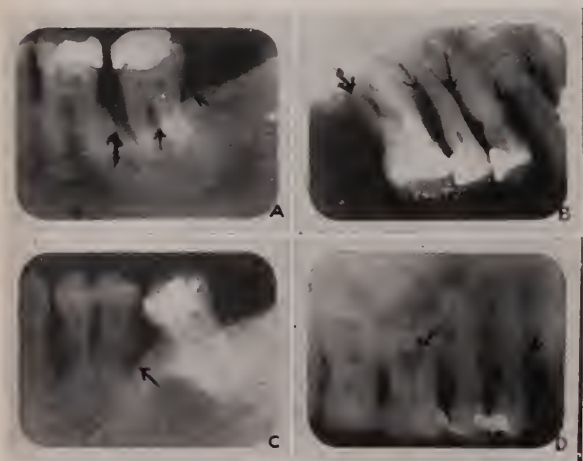


Fig. 2.—Roentgenograms showing deep pyorrhea pockets along the roots of teeth and between the bifurcations of molar teeth.

decomposed pulp of a tooth may be a focus of infection without definite periapical symptoms. Periapical areas of osteitis occasionally are found in teeth which may test vital where the infection has been carried from an infected pulp and become localized at the apex.

3. *Periodontal Disease or Pyorrhea.* Pyorrhea pockets or pus pockets along the roots of the teeth (Fig. 2) harbor organisms which pass along the mucous and serous membranes of the alimentary canal, giving rise to secondary foci of infection. There is also a direct invasion of organisms from these pockets by way of the blood and lymph channels. However, most of the exudate passes into the mouth and the virulent effect of the organisms is destroyed by the oral and gastric secretions. However, particular attention should be paid to deep pyorrhea pockets, and those found in between the bifurcations of molar teeth. The deep ones may extend to the apex and cause apical infection and in the bifurcations of molar teeth harbor localized colonies of bacteria and the dissemination of infectious processes.

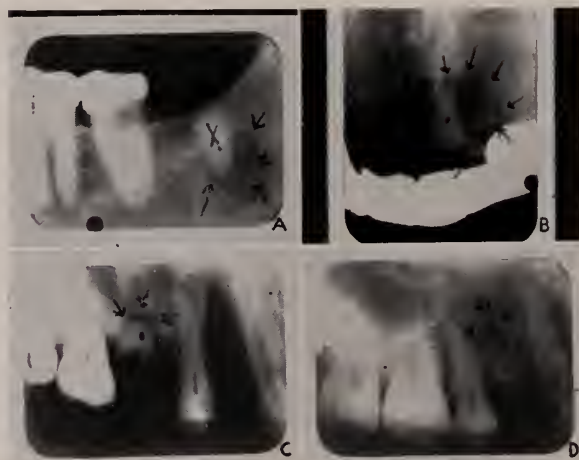


Fig. 3.—Roentgenograms showing residual areas of infection about roots left in after the ordinary method of extraction of teeth.

4. *Residual Infection.* The possibility that edentulous areas (areas where teeth have been previously extracted) and edentulous mouths where patients have been wearing plates for years may be a site of focus of infection have been brought forcefully to our attention (Fig. 3). The fact that patients have had all of their teeth removed and are wearing full upper and lower plates is not evidence that the mouth is free from focal infection.

Dr. Molt,⁵ of Chicago, reported a series of 900 areas examined where teeth had been extracted, and 48 per cent showed remaining roots or evidences of residual or retained infection. In the same article, Dr. Molt lists five conditions which may be found in edentulous mouths:

- (a) Broken off root fragments.
- (b) Impacted or unerupted teeth.
- (c) Cysts.
- (d) Periazeolar abscesses, remaining *in situ* and discharging through fistulas.
- (e) Residual areas of infection remaining ungenerated.

Dr. Boyd S. Gardner,⁶ of the Mayo Clinic, reported that, of 10,000 patients examined in one year, 33 per cent have roots left in after the ordinary method of extraction of teeth. About 15 per cent to 19 per cent have impacted or unerupted teeth. About 5 per cent to 10 per cent have residual areas of infection.

It is not uncommon to find patients who thought they had all of their teeth removed, and wearing an upper denture, complain of frequent and severe headaches. Sinus treatment being of no avail, X-ray examination reveals an embedded cuspid or supernumerary teeth, and, upon removal of the teeth, the patient recovers rapidly.

Dr. Cole⁷ presented a case in which two upper teeth were removed in an effort to give relief from pain in *tic douloureux*. This failing, the entire mouth was radiographed and two areas of residual infection were found in the edentulous lower jaw. When these areas were cleaned out, the pain was relieved. Pus taken from one of the areas showed *staphylococcus aureus*. From the manner of recovery, and since this germ is capable of producing pressure, it was concluded that the presence of this area had caused the *tic*.

5. Impacted, unerupted or partly erupted teeth are often overlooked as locations of primary foci (Fig. 4).

It is generally conceded that any impacted tooth that has an opening to the surface or has the crown partially exposed can be and usually is a potential area of infection. Lucas,⁸ and Wahl⁹ claim that impacted or completely imbedded teeth may harbor virulent micro-organisms and be infected. They are of the opinion that after the enamel organ has finished its function and the tooth does not erupt the remnant of the enamel organ or Nasmyth's mem-

brane becomes physiologically and embryologically a functionless tissue and becomes a foreign protein, acts as a chronic irritant to surrounding tissues, and

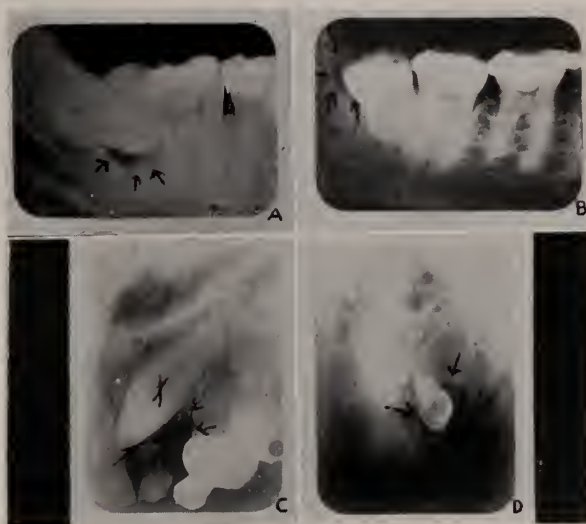


Fig. 4.—Roentgenograms showing infection about the crowns of impacted, unerupted and supernumerary teeth.

produces a localized inflammation. In this area of inflammation and lowered tissue resistances, micro-organisms become localized from the blood stream and, of course, become chronically infected. Therefore, all unerupted, impacted or embedded teeth should be looked upon with suspicion.

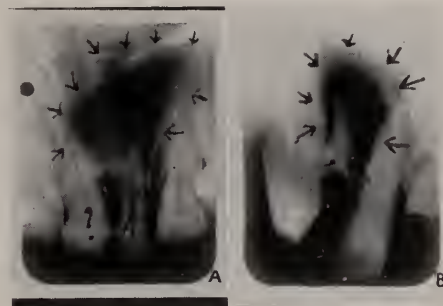


Fig. 5.—Roentgenograms showing infected radicular cysts which developed from pulpless teeth.

6. Very rapidly forming cysts and odontomas are often found about the crowns of impacted or unerupted teeth and apices of pulpless teeth (Fig. 5). These abnormal conditions often become infected.

THE STEPS A DENTIST SHOULD TAKE IN LOOKING FOR FOCI OF INFECTION ABOUT THE TEETH AND JAWS

- (1) A thorough dental history.
- (2) Exploration for any pockets about the crowns and roots of the teeth.

(3) A vitality test of all the teeth should be made.

(4) A complete X-ray examination should be made of all teeth, including the areas where teeth have been extracted.

The radiographs should be as perfect as can be made and their interpretation should include careful consideration in connection with X-ray diagnosis. In my experience with cases referred to me by dentists a large percentage of their dental radiographs show so little of accurate detail as to be of little value when exactness of interpretation is necessary. It is claimed that the dental X-ray machine is one of the most abused apparatuses we have in dentistry. The fact that *some* kind of an image is so easily obtained by merely placing a dental film in the mouth with a tooth between the tube and film without any regard to proper angulation or exposure and development of films for detail bears this out.

The decision as to the teeth which should be extracted, especially in questionable cases, is not easy to make at times. The correct conclusions should be based on the facts disclosed by mouth examination, the relationship of these conditions to the status of the rest of the teeth and the investing tissues, the health of the patient, especially with the advice of the attending physician.

The condition of the patient's health and the physician's advice determine the general program that should be followed, whether a radical or a conservative one. We feel that a conservative program is indicated where the patient is in good health, and is relatively immune to other infections. In cases of the patient suffering from some foci of infection, it should be the rule to eliminate all possible areas of

infection about the teeth and jaws, even though this may include the removal of a few divitalized or pulpless teeth which appear to be negative both in X-ray examination and after careful clinical examination. The number of teeth to be removed at one time should be determined by the condition of the teeth and the health of the patient. The program should be ratified by the physician.

CONCLUSION

As to this focus of infection principle, one can only recall the fact that it has survived a quarter of a century of highly active research and clinical trial, and, as a consequence, has received world wide recognition as a valuable clue to the solution of many therapeutic problems of diagnosis and treatment.

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MEDICAL TREATMENT OF NON-TUBERCULOUS INFECTIONS OF THE KIDNEY AND URINARY TRACT.*

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An infection involving the kidney is so intimately associated with the lower urinary tract that it is necessarily included in this paper, though no attempt will be made to discuss the other anatomical divisions separately. This usually falls to the urologist, and, consequently, requires special examinations, such as cystoscopy and pyelography.

There are three types of kidney infection from the pathologist's standpoint, namely, pyelitis, when only the lining of the pelvis is affected; pyelonephritis, when there is associated parenchymal involvement; pyonephrosis, when cavitation has taken place. The first is comparatively rare, for at autopsy there is nearly always concurrent nephritis. Yet as most people with urinary infection recover, one cannot be absolutely certain as to the extent of pathology in the

*Presented in part before the Mid-Tidewater Medical Society, October 24, 1939, at Miller's Tavern, Va.

majority of cases. From the clinical standpoint it makes little difference which is present, as far as medical treatment is concerned, provided there exists adequate drainage.

The route by which infection reaches the kidney has caused much controversy in the past. It is not yet settled, but we have much new information. For many years it was believed that bacteria were brought up from the lower urinary tract *via* the lumen of the ureter directly to the kidney. Lymphatic transmission has also been suggested. There are many arguments against both routes. Certainly it seems difficult to visualize organisms making their way against the current of urine in a narrow tube lined with ciliated epithelium when the additional handicap of gravity has to be overcome. Another popular theory was that organisms could be brought from above, so to speak, by the blood stream to the kidney and thus set up a diffuse infection.¹

It has been pointed out that two mechanisms might be employed in the majority of cases. Bacteria can travel by the lymphatics surrounding the ureter and thus reach the peri-renal space. From there they would go to the thoracic duct by way of the lumbar lymphatics and eventually reach the blood stream, being finally brought back to the kidney. According to Helmholtz,² coccal infection is more apt to be brought to the kidney from the blood, and bacillary by other routes. However, it is his belief, as well as MacCullum's,³ that kidney involvement occurs chiefly by infection from the bladder by way of the lumen of the ureter. On factors predisposing to kidney infection, all are in accord, namely, stasis, bacteria and lowered resistance.

The route of infection is quite important in treatment if it can be established, as those factors which were instrumental in producing it must be eliminated if one hopes to produce a permanent cure.

The symptoms and signs of urinary infection are too well known to be discussed here. The essential feature of the diagnosis consists in the finding of pus in the urine. Along with this may be numerous complaints, both obscure and otherwise. Fever is perhaps the most common general manifestation, and, unless there is fairly adequate drainage, it is almost invariably present.

The present-day treatment of such infections depends primarily on the bacteriology. One cannot logically use suitable drug therapy otherwise. For this means a catheterized specimen is obtained under

as antiseptic conditions as possible (if the patient be a female) and cultured on an Endo plate as well as in brain broth. It is usually quite easy to get the offending organism by such a procedure. One has to look out for the common contaminants, such as diphtheroids, subtilis and staphylococcus, but these can be eliminated by the Endo plate.

Pyogenic organisms can be isolated by transferring a loop of the broth culture to a blood agar plate. These facilities are denied many of us; however, a centrifuge and microscope are within the reach of anyone. A Gram stain of the centrifuged fresh specimen will reveal whether one is dealing with a Gram negative bacillus or a Gram positive coccus. If the former, it is almost certainly a colon bacillus; if the urine is alkaline, it is probably one of the proteus group. The cocci are harder to identify, but, with a little practice, staphylococci and streptococci can usually be distinguished and rarely are other organisms encountered in general practice. The above procedure is simple, quick and is effective in probably 90-95 per cent of instances.

The great majority of urinary infections are produced by the colon bacillus. In most cases, mandelic acid, as either the ammonium, calcium or sodium salt, is given in doses of three grams four times a day. Sometimes it is necessary to augment this with some acid salt, such as ammonium chloride. The pH of the urine is ideally below 5.5 to render it bactericidal. This may be conveniently tested by the nitrazone papers furnished by some manufacturers. The drug should be used for ten days to two weeks, depending on the response. Cultures should be taken every few days and a comparison made as to the number of previous cultures, using the same technique in each instance. In pyuria conditions, after this period of time, it is best to stop the drug and another survey made of the problem. Most clinicians insist on limiting the fluid intake to 1,200 to 1,500 c.c. a day. In very warm weather this should be slightly increased. The complications include gastro-intestinal symptoms, such as nausea, vomiting and hematuria. Both of these clear promptly on withdrawal of the drug. It would be well to mention here that it is important to determine the amount of impairment of renal function before beginning mandelic acid preparations; this is probably only necessary in elderly individuals. The P.S.P. is as reliable as any and has the distinct advantage of simplicity, and can be done in the home or office with equal ease. As with most

such tests, one technique should be established and followed in all cases. The exact amount should be injected intravenously and specimens taken at the end of fifteen minutes, one-half hour, one hour, and two hours. Normally, each specimen has roughly doubled the concentration of the succeeding one. The total concentration varies from 60-70 per cent.

With the cocci and proteus group, mandelic acid is not usually of much benefit unless the pH of the urine is rendered very low. *Streptococcus fecalis*, however, responds well. *Proteus* produces an alkaline urine and it is very hard to get the pH to a satisfactory level.

Sulfanilamide has been very effective with proteus, the hemolytic streptococcus and with the colon bacillus.⁵ The dosage employed is similar to that in other conditions. Some physicians prefer beginning with the initial dose of 4 grams (60 grains), then 4 or 5 grams daily for two days, when it may be dropped to 3 or 4 grams or according to the size of the individual, the response to therapy as manifested by cultures and the blood concentration. The same dangers attendant to this drug in other conditions are also present here; the blood has to be carefully watched for hemolytic anemia, agranulocytosis and the urine for red blood cells and albumin. Reports all over the country testify as to its effectiveness. It is convenient and does not have to be continued any longer than two weeks in a great majority of cases.

For the staphylococcus and pneumococcus infections, sulfapyridine has been employed. The dosage is about the same as that for sulfanilamide. The same dangers are also to be watched for, but, in addition, peripheral neuritis may occur and the very grave and distinct possibility of calculi. These are composed of acetyl-sulfapyridine crystals.⁶ It has been said that with a pH of 8 or more, this can be largely avoided. If sulfapyridine is used, the urine should be watched very carefully for red blood cells and at the first signs the drug should be discontinued.

Recently, sulfathiazole has been employed for staphylococcus and pneumococcus infections, and it is felt that it is equally as effective as sulfapyridine, slightly less toxic, and less apt to produce calculi. It has also been found to be of considerable value against many other organisms including *B. coli*. It has been less potent against streptococcus fecalis.⁷ In spite of the many encouraging reports, it should be remembered that it has not been used sufficiently long enough to have its dangers well established, and

any patient under such administration must be watched with double caution.

There are many antiseptics used in the past, which have been highly regarded but which have been more or less replaced by chemo-therapy. Among these are urotropin, acriflavine and pyridium.⁸ It is doubtful just what value these have; each one was ushered in with considerable enthusiasm and each one has declined rapidly in popularity.

The time honored procedure of forcing fluids and changing the reaction of the urine has relieved many people. This is the safest of all and the least likely to cause distress to the patient. Elderly subjects, particularly those who have had pyuria for a long time, seldom get permanent cures from chemo-therapy. The urine rapidly becomes sterile and it almost invariably shows pus shortly after the drug is discontinued. Explanation of this on specific pathological data is unsatisfactory, but it is obvious that if the same factors responsible for the production of an infection are still present, a recurrence is to be expected. Such individuals consistently show pus and bacteria but get along fairly well until some other illness supervenes, or until the resistance apparently becomes lowered, and then develop symptoms, often from pyelitis. Here active treatment is required. This is one of the commonest problems confronting the internist or general man. Who has not had a paralytic, a patient with a fractured hip, or a chronic respiratory infection go through such a cycle? Usually they are old and have associated cardio-vascular disease in addition. It is felt that large amounts of fluids and alkaline or acid salts, as indicated, is the best approach to this type of case.

To briefly summarize the above, it may be stated that there are several possible choices of treatment available in nearly every case. Careful deliberation is necessary before a decision is made, but such time is well spent and will be rewarded with optimum results. Each patient presents an individual problem and it is to be so handled. Occasionally a mixed infection is present; sometimes the offending organism is resistant to the drug usually most effective. When this occurs, it is wise to search for calculi or other obstructive agents before instituting further therapy.

There are general measures in treating urinary infection which are important regardless of the drug used. These include bed rest, with enough elevation to facilitate adequate drainage, and the usual sedatives or analgesics to provide relief from pain and

restlessness. It is not always necessary to limit fluids, but, when using the sulfanilamide group or mandelic acid it is best not to go higher than the minimum amount the patient can take without becoming really uncomfortable. Sponge baths are excellent when the temperature is high, and bed clothes should not be allowed to remain damp.

When the acute symptoms have subsided and the infection is apparently under control, it is well to establish, when possible, the inciting factor. In the male particularly, there is apt to be an obstruction somewhere in the lower urinary tract. It is unusual to see a healthy person suddenly develop an acute urinary infection otherwise. Careful search usually reveals stone, stricture or enlarged prostate. Such study may require a urologist. However, most people feel that cystoscopic examination should not be done during an acute process unless there is definite indication; although a safe and easy procedure in competent hands, it is possible to add trauma to infection, and actually do harm. The intravenous pyelogram is becoming more and more popular and, when there is no serious diminution of kidney function, often yields all the information required.

In the past it has perhaps been the custom to regard urinary infection too lightly. It is certainly true that very few patients die from acute pyelitis, cystitis, etc., but the after-effects may be serious. Recent work has shown the relationship of hypertension to kidney disease. It has been estimated that 15-20 per cent of cases of "essential" hypertension are associated with kidney infection⁹; of these, pyelonephritis ranks highest. It would seem that early eradication of all urinary infections, particularly in young persons, might reduce this group to a minimum.

SUMMARY AND CONCLUSIONS

1. From the medical standpoint, the diagnosis of urinary tract infection is made by the finding of pus in the urine.
2. Knowledge of the bacteriology is the essential guide to therapy. Gram stain of the sediment is a simple and usually adequate method for determining this.
3. Urinary infections are seldom fatal, but, because of possible serious after-effects, should be stringently treated early. Elderly patients are best handled conservatively.
4. Any case which does not yield to treatment in a satisfactory period of time should be investigated by a competent urologist.

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ACUTE HEMOLYTIC ANEMIA AND RENAL INSUFFICIENCY OF SULFANILAMIDE AND SULFAPYRIDINE THERAPY.

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Following the report by Harvey and Janeway,¹ in 1937, of two cases of acute hemolytic anemia complicating sulfanilamide administration, there have been many additional studies. The most comprehensive of these is that of Wood,² published in 1938.

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This report is concerned with eight patients in whom acute hemolytic anemia developed during sulfanilamide administration, and one in which the same developed during sulfapyridine therapy. Two of the nine patients developed renal insufficiency with nitrogen retention: a complication which adds to the

complexity of the syndrome following severe blood hemolysis.

CASE REPORTS

Case 1. O. H., a colored male, aged fourteen, was admitted to the hospital on June 20, 1938, with a history of pain and swelling of the right knee of eleven days' duration. Temperature was 103 degrees Fahrenheit. The diagnosis of acute gonococcic arthritis was made. Sulfanilamide therapy was begun with an initial dose of 40 grs., and continued with 20 gr. four times daily. On July 2, after receiving 680 gr., the patient developed the phenomena of severe acute anemia. Examination of the blood showed a reduction of the hemoglobin from the admission level of 78 per cent to 18 per cent, and the red blood cells from 3,220,000 to 1,060,000. There was a rise of the leukocytes from 12,700 to 33,500. The patient recovered promptly following the withdrawal of sulfanilamide, two transfusions, and intravenous saline.

Case 2. J. B., a colored male, aged eight, was admitted to the hospital on June 18, 1939, in an almost moribund state. The history was that he had had a slight sore throat from which streptococci had been cultured. He was given sulfanilamide by his physician three days before admission; the exact dosage was not known, but it was not large. On admission the patient was almost completely comatose, air hunger was a prominent symptom, and the mucous membranes were very pallid. Temperature was 101.4; pulse 126; respiration 32. The remaining physical examination was negative except for a faint precordial systolic murmur. The hemoglobin was 19 per cent; red blood cells 900,000; white blood cells 64,200 with 76 per cent neutrophils. Non-protein nitrogen was 48 and the icteric index 14. He was treated with blood transfusions and fluids, but died within twenty-eight hours after admission. Permission for an autopsy could not be obtained.

Case 3. C. B., a colored male, aged twenty-one, was admitted to the hospital with a history of having developed anemia four days after sulfanilamide therapy had been used by a private physician as treatment for acute rheumatic fever. His first symptoms were weakness and dizziness. On examination, he was found to be acutely ill, air hunger was a prominent symptom, and the mucous membranes were pallid; urinalysis was entirely negative; acid in reaction. The hemoglobin was 35 per cent; red blood

cells 1,500,000; white blood cells 37,500 with 88 per cent polymorphonuclear neutrophils. He was treated with fluids, blood transfusions, and sodium bicarbonate by mouth in order to secure and maintain an alkaline reaction of the urine at the kidney level.

Laboratory data:

Admission	Hbg.	R. B. C.	N. P. N. (mgm.%)
6-18-39	35%	1,500,000	
6-19-39			126
6-21-39	36%		
6-22-39	46%	2,250,000	
6-26-39			80
7- 6-39	60%	3,460,000	37

His recovery was prompt and complete.

Case 4. E. B., a colored male, aged fifteen, was admitted to the hospital on August 16, 1939. One week before admission he was given sulfanilamide by a private physician as treatment for sore throat. He received 80 gr. for two days, and 40 gr. for two more days. On the fourth day he developed nausea and vomiting, and one day later passed bloody urine. On examination the patient appeared acutely ill; the mucous membranes were pallid, and the sclerae were slightly jaundiced. Urinalysis showed albumen and casts, but no red blood cells were found. The white blood count was 24,450 with 71 per cent neutrophils. The icteric index was 19. The remaining laboratory data is as follows:

Admission	Hbg.	R. B. C.	N. P. N.
8-16-39	22%	1,220,000	
8-17-39	34%		137
8-19-39	40%	2,100,000	
8-21-39			167
8-24-39	44%		194
8-26-39	52%		140
8-29-39	48%		81
9- 1-39	48%		57
9- 5-39	50%		39

The patient made an uneventful recovery.

Case 5. A colored female, aged twelve, was admitted to the hospital on March 26, 1940. Four days before admission she was treated with sulfanilamide for a sore throat, receiving 15 grains four times a day. Nausea and vomiting began almost immediately and dizziness was severe in twenty-four hours. On admission the examination showed a weak, lethargic colored female; the mucous membranes were pallid, and a systolic murmur was heard over the entire precordium. Hemoglobin was 40 per cent; red blood cells 1,820,000; white blood cells 16,050 with 82

per cent neutrophiles. The patient was given multiple transfusions and intravenous glucose and saline.

She made an uneventful recovery.

Case 6. A colored female, aged seven, was admitted to the hospital on April 7, 1940, in a critical condition with lobar pneumonia in the right base. Hemoglobin was 50 per cent; red blood cells 2,800,000; white blood cells 18,500 with 88 per cent neutrophiles. She was given sulfapyridine, gr. 30 on admission, and gr. 15 every six hours. In four days she was irrational; temperature, which had fallen to normal, was 101°; hemoglobin had fallen from 50 per cent to 15 per cent; red blood cells from 2,800,000 to 91,000; and white blood cells had risen from 18,500 to 84,000. Urinalysis showed bloody urine, most of which was hemoglobin. Icteric index was 50, and non-protein nitrogen 62 mgm. per cent. The patient was given blood transfusions and fluids, with return of the non-protein nitrogen to normal.

Recovery was complete.

Case 7. C. J., a colored male, aged fourteen. This patient was admitted to the hospital June 3, 1940, in a critically ill condition. His history was of malaise, headache, and fever of several days' duration, beginning April 29, 1940. At this time he was given sulfanilamide, 10 grains a day for four to five days; patient apparently recovered. But his symptoms returned in two weeks, and he was again given sulfanilamide 30 grains a day for four days. The hemoglobin was checked by his physician, the readings being 60 per cent on May 28, 1940, 50 per cent on May 29, 1940 and 40 per cent on May 30, 1940. The patient was admitted to the hospital on June 3, 1940; he was acutely ill. Temperature was 105 degrees Fahrenheit, pulse 126, respiration 32. Mucous membranes were pallid. Sclerae were slightly icteric. Examination of the head, neck, lungs, and heart showed no abnormalities. The spleen was barely palpable. There was no blood in the feces. Urine was dark, acid in reaction, sp. gr. 1.014*, albumen 1 +; sediment showed many granular casts and a few W.B.C. Hemoglobin was 20 per cent; R.B.C. 1,070,000; W.B.C. 14,100; with 76 per cent polymorphonuclear neutrophiles and 24 per cent lymphocytes. The blood sugar was 124 mgm. per cent, N.P.N. 78 mgm. per cent with creatinine 2.4 mgm. per cent.

Patient's blood culture was positive for the E. Typhosus on May 29, 1940, and his agglutinations were positive with the "O" antigen in dilutions of

1-200 on May 29, 1940, 1-400 on June 3, 1940 and 1-640 later.

Patient was treated with fluids, blood transfusions, and soda bicarbonate by mouth.

His subsequent laboratory data was:

Admission	Hbg.	R. B. C.	W. B. C.	N. P. N.
6/ 3/40	20%	1,070,000	14,100	78 mgm.%
6/ 4/40				56 mgm.%
6/ 5/40	35%		10,100	
6/ 8/40	45%	2,260,000	3,850	
6/10/40				29 mgm.%
6/12/40	55%	2,530,000	3,100	

Patient's temperature dropped to 99°-100° and he appeared to be convalescing well when temperature began to climb to 103°-105° on June 20, 1940. On June 23, 1940, patient had a severe hemorrhage from the bowel with bloody and tarry stools and resultant shock. Hemoglobin was 35 per cent. He was treated for this and transfused several times with no further bleeding. Further recovery was uneventful.

Case 8. M. B., a colored female, aged nineteen. This patient was admitted to the Genito-Urinary Service of this hospital on June 26, 1940 complaining of abdominal pain, nausea, and vomiting. She was quite toxic and it was not possible to elicit a good history from her. For three weeks before admission, she had suffered with lower abdominal pain. Three days before admission (June 23, 1940) she developed chills, fever, nausea, and vomiting and bilateral costo-vertebral angle pain. Examination showed a toxic, acutely ill, colored female. T.-P.-R. was 120 degrees (Fahrenheit)-90-20. Blood pressure 120/80. Examination of the head, neck, lungs, and heart showed no abnormalities. Examination of the abdomen revealed tenderness in both lower quadrants and in both costo-vertebral angles. These findings suggested pyelitis. Catheterized urine showed a 1 + albumin and 25 to 30 white blood cells to each high power field. Blood count was hemoglobin 90 per cent; R.B.C. 4,600,000; W.B.C. 11,000 with 87 per cent polymorphonuclear neutrophiles.

Patient's temperature remained elevated, 104° to 106°. She was given sulfanilamide from June 26, 1940 to June 30, 1940, dosage being gr. 15 three times a day. Blood culture taken on June 28, 1940 was found to be positive for E. Typhosus, stool culture positive on July 1, 1940. Sulfanilamide was discontinued on June 30, 1940, but hemoglobin fell to 35 per cent on July 2, 1940 and W.B.C. to 3,500. Patient was given intravenous saline and blood trans-

fusions, but failed to rally and died on July 3, 1940.

Case 9. V. S., a colored female, aged nineteen, was admitted to the medical service on September 29, 1940 with the history of sore throat, malaise, and headache of one day's duration. Examination was negative except for a well developed and nourished colored female, with enlarged inflamed tonsils with patches of exudate over each. T.-P.-R. was 103°-126-30. Urine was acid in reaction, with a trace of albumin, and 4-6 W.B.C./H.P.F. Blood examination showed hemoglobin of 80 per cent; R.B.C. 4,-430,000; W.B.C. 10,900 with 79 per cent polymorphonuclear leukocytes. Sulfanilamide therapy was begun, 30 grains as an initial dose and 15 grains every four hours. This was continued for four days, at which time the mucous membranes were quite pallid, hemoglobin had fallen from 80 per cent to 48 per cent, and the W.B.C. had risen from 10,900 to 22,000. N.P.N. was 43 mgm. per cent and icteric index 19 units. Sulfanilamide was discontinued at once, fluids were forced by mouth, alkalies were given by mouth in the form of soda bicarbonate, and a blood transfusion was administered. Recovery was prompt.

DISCUSSION

In Wood's² report, he analyzes twenty-one cases of acute anemia developing in a series of 522 cases treated with sulfanilamide. He considered the development of the anemia to be an individual peculiarity of the patient and not due to an over-dosage of the drug. In his patients, nausea and dizziness developed twelve to twenty-four hours before the onset of the anemia; and the initial drop in hemoglobin occurred twenty-four to seventy-two hours after the beginning of sulfanilamide administration. The maximum anemia occurred usually on the fifth day, but occasionally as early as the third or as late as the seventh day. Elevation of temperature usually occurred with the hemolytic crisis.

All of Wood's² cases recovered, but there have been two deaths reported with anemia following sulfanilamide administration and one with anemia following sulfapyridine administration. The first was by H. Wood,³ and the second by Koletsky.⁴ In neither of these patients was nitrogen retention reported. The case, however, of Ravid and Chesner,⁵ in whom the anemia followed sulfapyridine administration, showed a definite nitrogen retention (non-protein nitrogen as high as 258 mgm. per cent).

It is well known that nitrogen retention may complicate hemorrhagic malaria with hemoglobinuria. Toone⁶ is reporting such a patient with the non-protein nitrogen of 220 mgm. per cent. A similar case has been reported by Wakeman *et al.* The writer studied a parietic patient on malarial therapy who developed renal insufficiency, with a non-protein nitrogen of 115, who promptly recovered following quinine therapy.

The pathological reports of the cases of H. Wood³ and Koletsky⁴ showed evidence of acute anemia of the organs, hyperplasia of the bone marrow, and "kidney changes which resembled those of black-water fever". In these kidneys there was described tubular degeneration with casts in the tubules, hemoglobin casts. Throughout the interstitial tissue there was edema and leukocytic infiltration. In the case of Ravid and Chesner,⁵ there was tubular degeneration, and in many tubules the lumina were plugged or distended with free and intracellular golden-yellow and brownish pigment in the form of casts.

These kidneys resemble, to a varying degree, the kidneys of patients who die with blood transfusion reactions (in whom clinically there is hemoglobinuria, jaundice, oliguria, and nitrogen retention), and the kidneys of animals in which blood transfusion reactions have been produced experimentally. Microscopically such kidneys show tubular degeneration, deposition of brownish material (acid hematin) in the tubular lumen with plugging of the lumina of many tubules, and edema and leukocytic infiltration of the interstitial tissue. It is most likely that the nitrogen retention which occurs in some cases of acute hemolytic anemia following sulfanilamide and sulfapyridine administration is due to similar renal changes.

Baker and Dodds⁸ showed experimentally that transfusion reactions would produce no oliguria or nitrogen retention and no microscopic changes in rabbits provided the animals' urine was alkaline before the transfusion reaction was produced. They also found that, if the urine of the rabbits was acid before the transfusion reaction occurred, there would be (clinically) oliguria, nitrogen retention and death in uremia, and the kidneys would show the nephropathy mentioned above. This work has been confirmed by DeGowin *et al.*⁹ on dogs.

Because of the reports of Baker and Dodds⁸ and DeGowin *et al.*⁹ and because of similarity of the kid-

ney lesions of patients with acute hemolytic anemia and patients with blood transfusion reactions, we administer alkalis to these patients to change the reaction of the urine to an alkaline one and to maintain this alkalinity.

SUMMARY

1. Eight cases of acute hemolytic anemia occurring during sulfanilamide administration are reported: six recovered and two died.

2. One case of acute hemolytic anemia occurring during sulfapyridine administration is reported: this patient recovered.

3. In the first eight cases (those treated with sulfanilamide), two developed quite marked nitrogen retention, as shown by elevated non-protein nitrogen values, but neither was clinically uremic. One developed moderate nitrogen retention; he also was not uremic.

4. It is believed that the kidney changes described, in other reports, of tubular degeneration, deposition of acid hematin casts in the tubules, with blockage and dilatation of some of the tubules, and interstitial edema and leukocytic infiltration are similar to the kidneys of patients with blackwater fever, and patients and animals with blood transfusion reactions.

5. Because of the work of Baker and Dodds,⁸ and

of DeGowin *et al.*,⁹ which showed that kidney changes with resulting hemoglobinuria and nitrogen retention following blood transfusions in animals occurred if the urine was acid before the transfusion reaction occurred, but did not occur if the urine was alkaline; and because of the similarity of kidney lesions of patients with acute hemolytic anemia from sulfanilamide or sulfapyridine and patients with blood transfusion reactions, it is recommended that alkalinization with sodium bicarbonate, to the point of maintaining an alkaline reaction to the urine, be used on all patients with acute hemolytic anemia.

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- 913 Allied Arts Building.

PLATYSPONDYLY.

HENRY G. HADLEY, M.D.,
Washington, D. C.

Platyspondyly is a term first used by Putti,¹ and derived from the Greek, meaning wide (platy) and vertebra (spondylos). This was mentioned by Nau² who described it as a widened bilobar vertebra. This condition is caused by failure or delay of fusion in the membranous stage of the embryological development. In this stage, the layer of mesoderm on each side of the median line, after the appearance of the medullary canal and the notochord, divides into the mesoblastic somites. These sclerotomes divide into two parts at the inter-segmental fissure, which process is the neo-segmentation of Van Ebner.³ The cranial half of one sclerotome joins with the caudal half of the other to form the primitive vertebrae. There is a perichordal septum dividing each vertebral anlage into two halves, and these halves fuse later to form

the vertebrae. Failure or delay of this fusion causes hemi-vertebrae or platyspondyly.

Putti⁴ found this condition present in the fourth and fifth lumbar vertebrae, and in each of his cases there was also a spina bifida present. He considered the widening of the vertebrae to be due to the lack of union of the neural arches. Lance⁵ considered this anomaly to be a failure of fusion in the membranous stage. While spina bifida may occur in any stage, platyspondyly only occurs in the membranous stage. Lance describes three types, one which usually occurs in the fourth or fifth lumbar, as the cases of Putti.

The second type is a widened vertebral body placed in two cuneiform segments with the apex central and the bases lateral. This may be associated with spina bifida which is a failure of fusion of the posterior

arches or somatochisis which is a failure of fusion of the body. This is most frequent in the dorsal or servico-dorsal areas. In type three, the superior and inferior surfaces are concave in the center, while the inter-vertebral disks are convex and higher than normal.

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2152 Sixth Street, S.W.

Correspondence

Dr. Stewart R. Roberts.

TO THE EDITOR:

Dr. Stewart R. Roberts died in his home in Atlanta at 5:40 on Monday evening, April 14. I went through to Atlanta on Tuesday night and attended his funeral on Wednesday afternoon. His body was taken to Oxford, Georgia, thirty or forty miles from Atlanta, and encrypted there in the family plot. Emory College was established at Oxford and it was there even when Dr. Roberts got his academic degree and until it was transferred to Atlanta and transformed by the generosity of the Candler and of others into Emory University. Stewart Roberts had the Chair of Clinical Medicine in the School of Medicine of Emory University. Although he kept up with the progress in medicine and made use of all the scientific skill within his reach in his medical ministrations, he never forgot that a man is a spirit and his method of practice embraced all the arts of the old-time family doctor. When he sent a patient to me, he always revealed as much knowledge of his patient's immaterial structure as of the patient's physical mechanism and he tied his patients to him. Many of them leaned upon him and I suppose that he became a victim, perhaps, of their leanings. He had a rather robust frame and he should not have passed away at the early age of sixty-two, but his

heart had been doing its work more and more poorly for three or four years and the condition of his heart finally became such that it had to have rest.

Wednesday was a lovely day in Atlanta, a little too warm but beautifully clear and the dogwoods were in full bloom, and so was the wistaria, and so were many other flowers. I suppose I had not been in Atlanta at dogwood time. The city must feature that tree. At any rate, there are thousands and thousands of dogwoods in Atlanta.

I had never before seen anywhere so many and such lovely cut flowers as were in the Glenn Memorial Methodist Church at Emory University, in which the brief service was held. Someone remarked that Stewart, if he were conscious, approved it all and enjoyed it all. His secretary told me that, in spite of tightly swollen lower extremities and in spite of lips that were generally blue, and in spite of frequent shortness of breath and of a good deal of pain within his chest, he was busy with patients in his office only four or five days before his death. I had a sweet little note from him on the Friday before his death on Monday. I regarded it as a farewell message and I think he so intended it.

You will recall that he made the first address before our Section on the History of Medicine*. I think that statement is true. I believe that I was the first Chairman of the Section. When I asked Stewart Roberts if he would talk to us he replied promptly that he would gladly do it if we would allow him to talk in his own way about the prison maintained by the Confederate Government at Andersonville down below Atlanta. He had spent, I happen to know, a great deal of time for a good many years and probably no little money in collecting data about that horrible old place. I thought he did a brave thing well in presenting the history of the old prison to us so graphically and so frankly. His secretary told me that not so long ago he shook up some of the folks in Atlanta by a thesis on General William Tecumseh Sherman. Stewart told me when I was in his home with him in Atlanta three or four years ago, in the beginning of his sickness and while he was being kept in bed, that General Sherman was simply a highly efficient modern soldier and that he was going to present him as such if he lived long enough.

J. K. HALL.

*Of the Richmond Academy of Medicine.

Mental Hygiene Activities

There has been a real impetus in mental hygiene activities in Virginia during the last months which cannot but be gratifying to those who are concerned with problems of mental health. In April, at the State Conference of Social Work, the Virginia Society for Mental Hygiene and the Medical Society of Virginia jointly sponsored a program of three meetings. Two of the sections were concerned with a discussion of problems of adolescence in relation to the national emergency and the part community facilities play in meeting the needs of young people. Adolescence has been the subject under consideration of the Mental Hygiene Society for the year, and this was tied in with the theme of the conference as a whole which emphasized community action and home defense. Participating in these two meetings were Dr. James Williams, psychiatrist for the State Department of Public Welfare; Dr. James M. Hinton, department of psychology at Washington and Lee University; Mrs. Margery C. Wyatt, psychiatric social worker, State Department of Public Welfare; Mr. Roy L. McLaughlin, president of the National Association of Training Schools; and Dr. George H. Preston, Commissioner of Mental Hygiene, Maryland. The third session concerned itself with the problem of the national venereal disease control and its relation to national defense. On this program were Mildred Hearsey, United States Children's Bureau; Dr. E. M. Holmes, Jr., Virginia State Department of Health; and Dr. N. B. Hon, U. S. Public Health Service. The meetings were well attended and the discussions were lively and full of content. Through them social workers, psychiatrists and medical men were brought together for consideration of their common problems which should mean much toward the spread and understanding of mental hygiene.

Another important mental hygiene activity was the meeting sponsored by the society at the annual meeting of the American Psychiatric Association. This meeting was addressed by Dr. Abraham Myerson and Dr. L. G. Rountree, chief medical officers of the Selective Service System. It drew a large crowd, both of visiting psychiatrists and interested lay people. The National Psychiatric meeting was also of very real importance in interesting the people of Virginia in problems of mental hygiene. Many lay people

attended and the excellent newspaper accounts of papers given at the meetings reached many more.

The Virginia Society has been active in several Virginia communities by conducting programs. A successful meeting in Danville in May was followed by an institute in Norfolk, which had as its subject Mental Hygiene and the Emergency. We feel that Dr. Wilson, the president of the society, is to be congratulated on his excellent planning of this fine series of meetings which should make a real contribution to intelligent understanding of problems of mental health throughout the state.

MARGERY COLLIER WYATT.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for April, 1941, compared with the same month in 1940 and for the period of January through April, 1941, compared with the same period in 1940 follows:

	Apr. 1941	Apr. 1940	Jan.-Apr. 1941	Jan.-Apr. 1940
Typhoid and Paratyphoid Fever	9	9	42	39
Diarrhea and Dysentery	87	89	227	289
Measles	9,259	499	23,238	1,166
Scarlet Fever	141	192	734	753
Diphtheria	28	47	151	234
Poliomyelitis	3	1	10	6
Meningitis	21	4	45	24
Undulant Fever	0	0	3	4
Rocky Mountain Spotted Fever	3	0	4	3
Tularaemia	0	0	15	24

TYPHOID CARRIER CONTROL

The State Department of Health, through its Bureau of Communicable Diseases, is revising and intensifying its program of supervision of carriers of typhoid fever organisms. In areas served by full-time local health departments the control of typhoid carriers will continue to be under the direction of the local health officer. In areas without health service supervision and follow-up visits will be under the direction of the central office staff.

The importance of this activity has long been recognized and has been a part of the Department's program for several years. The need for more intensive control has been indicated as a result of the many military and industrial defense activities.

Military and Naval Section

The following have been added to the list of

Examining Physicians on Local Boards

Dr. Mallory S. Andrews, Norfolk.
 Dr. L. H. Apperson, Richmond.
 Dr. H. C. Ballou, Richmond.
 Dr. C. G. Bennett, Bishop.
 Dr. S. O. Bennett, Norfolk.
 Dr. M. H. Bland, Norfolk.
 Dr. J. H. Blackwell, Jr., Richmond.
 Dr. W. M. Bowman, Petersburg.
 Dr. Sheldon D. Carey, Floyd.
 Dr. W. H. Copley, Richmond.
 Dr. W. H. Craig, Richmond.
 Dr. Martin D. Delaney, Alexandria.
 Dr. W. W. Dunn, Richmond.
 Dr. J. Roland Ellison, Suffolk.
 Dr. E. E. Epperson, Meadowview.
 Dr. M. S. Foster, Bridgewater.
 Dr. Samuel H. Garst, Staunton.
 Dr. J. M. Green, Ferrum.
 Dr. R. L. Hillman, Emory.
 Dr. Wm. M. Hoffer, Suffolk.
 Dr. W. C. Jackson, Amonate.
 Dr. Bernard Jones, Culpeper.
 Dr. R. D. Jones, Jr., Norfolk.
 Dr. Southgate Leigh, Jr., Norfolk.
 Dr. Gershon J. Levin, Norfolk.
 Dr. V. L. Litsinger, Farnham.
 Dr. William Lueders, Jr., Staunton.
 Dr. C. F. Manges, Blacksburg.
 Dr. J. M. Mason (Col.), South Boston.
 Dr. E. H. Marsteller, Manassas.
 Dr. E. L. McGill, Petersburg.
 Dr. William Meyer, Herndon.
 Dr. Ernest B. Miller, Elkton.
 Dr. J. M. Newman (Col.), Richmond.
 Dr. B. L. Parrish, Norfolk.
 Dr. Marshall J. Payne, Staunton.
 Dr. G. L. A. Pogue (Col.), Bedford.
 Dr. Robert S. Preston, Richmond.
 Dr. W. S. Quaintance, Slate Mills.
 Dr. M. G. Rock, Bristol.
 Dr. W. E. Roye, Fincastle.
 Dr. H. L. Segar, Warsaw.
 Dr. E. N. Shockley, Bassetts.
 Dr. E. C. Shull, Herndon.
 Dr. Robert J. Styers, Amelia.
 Dr. G. G. Tanner, Grottoes.
 Dr. M. H. Todd, Norfolk.
 Dr. W. H. Turner, Jr., Round Hill.
 Dr. E. S. Waring, Fairfax.
 Dr. Charles Watson, Broadway.

Dr. Reid White, Jr., Lexington.
 Dr. J. E. Womack, Staunton.
 Dr. W. W. Wilkinson, LaCrosse.

Supplemental List of Medical Advisory Board Members

Dr. Charles V. Amole, Alexandria.
 Dr. Manfred Call, 3rd, Richmond.
 Dr. N. M. Canter, Harrisonburg.
 Dr. Carson L. Fifer, Alexandria.
 Dr. Herbert C. Jones, Petersburg.
 Dr. W. R. Warriner, Crewe.
 Dr. J. L. Hamner, Mannboro.

Medical Reserve Officers

In addition to those previously listed in this JOURNAL, the following doctors have been ordered to extended active duty with the regular army by the commanding general of the Third Corps Area:

Major Percy G. Hamlin, Williamsburg—Hoff General Hospital, Santa Barbara, Calif., as chief of section of Neuro-Psychiatry.
 Capt. Samuel M. Bloom, Clifton Forge—Chief, E. E. N. and T. Service, Station Hospital, Camp Lee.
 Capt. Fielding Jason Crigler, Charlottesville—Fort Belvoir.
 Capt. Carl William LaFratta, Richmond—Fort Belvoir.
 Capt. Walter Albert Porter, Hillsville—Fort Belvoir.
 Capt. Guy C. Richardson—Cantonment Hospital, Fort McClellan, Ala.
 Lt. Marion Fisher Jarrett, Farnham—Fort Eustis.
 Lt. Vincent E. Lascara, Norfolk—Camp Shelby, Miss.
 Lt. Joseph Liebman, Norton—Camp Lee.
 Lt. Sam Silver, Waynesboro—Fort Belvoir.
 Lt. William Parker Terry, Charlotte C. H.—Fort Belvoir.
 Lt. James Volpe, Jr., St. Charles—Fort George G. Meade, Md.

Naval Medical Reserve Officers

Lt. Comdr. Charles A. Young, Roanoke—Naval Hospital, Portsmouth.
 Lt. (jg) J. Edward Amiss, New Market—Naval Hospital, Portsmouth.
 Lt. (jg) Horace Leonard Jones, Jr., Richmond.
 Lt. (jg) Joseph P. Pollard, Alexandria.

Capt. Grant R. Elliott of Orange, formerly stationed at Camp Blanding, Fla., has been transferred to Savannah Air Base, Savannah, Ga.

Lt. M. Cohen, class of '31, Medical College of Virginia, is stationed at Camp Wolters, Texas, where he is attached to the X-Ray Department.

Lt. Otto S. Steinreich, class of '38, Medical College of Virginia, is at Station Hospital, Fort Bragg, N. C.

Miscellaneous

Interesting Rates.

The following letter has come into our hands. It occurred to us it may prove interesting to our readers:

BRINKLEY HOSPITAL, Inc.
Del Rio, Texas

April, 1941.

DO YOU WANT TO SAVE \$50.00?

Dear Friend:

The enclosed coupon, if presented at the office of the BRINKLEY HOSPITAL, INC., Del Rio, Texas, on or before midnight May 31, 1941, will entitle you to \$50.00 credit on any operation or treatment as described below:

PROSTATE TREATMENT

- A. Examination, Operation and one week in hospital -----\$360.00
- B. Examination, Operation, specified amount of medical treatment and one week in hospital -----\$460.00
- C. Surgical Technique, Medical Treatment, (one week's Sex Hormone Treatment for prostatism only, when indicated by examination), one week in hospital and the Guarantee of Service Plan. (In addition to your \$50.00 coupon, we will allow you the equivalent of your round-trip railroad fare on this treatment only -----\$750.00

For the treatment of VARICOSE VEINS

- only -----\$150.00 to \$175.00
- Examination, board and room not included.

For the treatment of PILES

- only -----\$250.00 to \$350.00
- Examination, board and room not included.

For the treatment of RUPTURE or HERNIA

- only -----\$250.00 to \$350.00
- Examination, board and room not included.

Our thorough examination -----\$50.00

(The \$50.00 coupon is not allowed on the examination fee.)

Many of you have written us indicating that you would like to come to BRINKLEY HOSPITAL, INC., for treatment but have been postponing it because of cold weather or not being able to make financial arrangements. Now May is the ideal month to make this trip and we feel this special offer of \$50.00 credit will place the price of medical or sur-

gical treatment within the reach of most everyone.

We cannot guarantee this offer to be in effect after midnight May 31, 1941, unless authorized by a special meeting of the Board of Directors, and inasmuch as we feel sure many will want to take advantage of this exceptional offer, we suggest that you write or wire us at once, so that we may make a reservation for you.

Sincerely yours,

BRINKLEY HOSPITAL, INC.

JHD:CH

P. S.—Upon arriving in Del Rio, go directly to BRINKLEY HOSPITAL, INC., on the mezzanine floor of the Roswell Hotel.

COUPON

Bring this coupon with you any day on or before midnight May 31, 1941, and if you stay and have an operation or stay and have a treatment you will be given credit for \$50.00. This \$50.00 credit will be allowed on the operation or treatment of prostate gland enlargement or infection, the treatment of ruptures, piles, varicose veins, leg ulcers, fissures, fistulae, ulcers of the stomach.

The only place this \$50.00 credit is not allowed is on the examination fee.

BRINKLEY HOSPITAL, INC.
Del Rio, Texas.

NON-NEGOTIABLE

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN W. HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Norfolk Auxiliary

The Woman's Auxiliary to the Norfolk County Medical Society held its regular meeting on May 2nd at the home of the President, Mrs. A. G. Horton. The treasurer reported seventy-four paid-up members. Mrs. T. Elmore Jones read a paper on the life of Jane Todd Crawford and it was decided to send ten cents per capita to the Jane Todd Crawford Memorial Fund.

The following officers were elected for the coming

year: President, Mrs. Walter P. Adams; president-elect, Mrs. W. E. Butler; vice-presidents, Mrs. W. Tilden Smith, Mrs. J. R. St. George, and Mrs. S. Byron Pope, Jr.; secretary, Mrs. R. M. Reynolds; assistant secretary, Mrs. B. L. Parrish; corresponding secretary, Mrs. R. Bryan Grinnan, Jr.; assistant corresponding secretary, Mrs. Brock D. Jones, Jr.; treasurer, Mrs. James W. Anderson; assistant treasurer, Mrs. W. R. Tyson; parliamentarian, Mrs. C. C. Smith; and historian, Mrs. Starke A. Sutton.

Mrs. Herbert Rogers, state chairman, and Mrs. Millard B. Savage, local chairman for the state meeting to be held at Virginia Beach in October, made several announcements concerning this meeting. Plans are being made for a fine convention and for making it enjoyable, interesting, and profitable.

After the meeting, Mrs. Horton entertained delightfully at a tea for the members and guests.

RUTH WILSON,
Publicity Chairman.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Edith Cavell. By HELEN JUDSON. New York. The Macmillan Company. 1941. Octavo of xvii-288 pages. Cloth. Price \$2.50.

Essentials of Gynecology. By LEO BRADY, M.D., F.A.C.S., Assistant Professor of Gynecology, University of Maryland; Associate in Gynecology, Johns Hopkins University; etc. And ETHNA LOUISE KURTZ, R. N., Supervisor, Gynecological Operating Room, Johns Hopkins Hospital, 1935-1940. The Macmillan Company. New York. 1941. Octavo of ix-257 pages. Illustrated. Cloth. Price \$2.75.

Essentials of Dermatology. By NORMAN TOBIAS, M.D., Senior Instructor in Dermatology, St. Louis University; Assistant Dermatologist, Firmin Desloge and St. Mary's Hospitals; etc. Philadelphia. J. B. Lippincott Company. 1941. xii-497 pages. Illustrated. Cloth. Price \$4.75.

The Story of Clinical Pulmonary Tuberculosis. By LAWRASON BROWN, M.D., Late Director of Trudeau Sanatorium; Lecturer in Trudeau School of Tuberculosis; etc. Baltimore. The Williams and

Wilkins Company. 1941. Octavo of ix-411 pages. Cloth. Price \$2.75.

Proctology for the General Practitioner. By FREDERICK C. SMITH, M.D., M.Sc.(Med.), F.A.P.S., Formerly Associate in Proctology, Graduate School of Medicine, University of Pennsylvania; Editor, the Weekly Roster and Medical Digest, Philadelphia County Medical Society; Editor, The Medical World; etc. Second Revised Edition. Philadelphia. F. A. Davis Company. 1941. Octavo of xxx-466 pages. Cloth. Price \$4.50.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Adriani, J.—The pharmacology of anesthetic drugs.
- Bailey, H.—Surgery of modern warfare.
- Bell, E. T.—A textbook of pathology. 3rd edition.
- Biological Symposia, volume 3.
- Blumer, G.—The Therapeutics of Internal Diseases, volume 3.
- Estabrook, G. H.—Man—the mechanical misfit.
- Fletcher & Raven—War wounds and injuries.
- Gaddum, J. H.—Pharmacology.
- Galdston, I.—Progress in medicine.
- Gordon-Taylor, G.—The abdominal injuries of warfare.
- Greenhill, J. P.—Obstetrics in general practice.
- Hartwig, J. G.—How authors write.
- Hume, E. H.—The Chinese way in medicine.
- James & Fickling—Injuries of the jaws and face, with special reference to war casualties.
- Krogman, W. M.—A bibliography of human morphology, 1914-1939.
- Krusen, F. H.—Physical medicine.
- Lewis, T.—The soldier's heart and the effort syndrome.
- Northfield, D. W. C. *et al.*—Special surgery in wartime.
- Ogilvie, W. H.—War primer on wound infection: its causes, prevention and treatment.
- Perla & Marmorston—Natural resistance and clinical medicine.
- Robson, J. M.—Recent advances in sex and reproductive physiology.
- Sherrington, C. S.—Man on his nature.
- Sigerist, H. E.—Medicine and human welfare.
- Silverman, M.—Magic in a bottle.
- Waterman, J. M.—With sword and lancet.

First Aid in Emergencies. By ELDRIDGE L. ELIASON, A.B., M.D., Sc.D., F.A.C.S., Professor of Surgery, University of Pennsylvania, School of Medicine and Graduate School of Medicine; Surgeon, University of Pennsylvania, Presbyterian and Philadelphia General Hospitals. Tenth Edition Completely Revised and Reset. Philadelphia. J. B. Lippincott Company. 1941. 12mo of xii-260 pages. With 126 Illustrations. Cloth. Price \$1.75.

This is not a book for the average first aider in that it puts such dangerous drugs as opium, car-

bolic acid, and bichloride of mercury and such equipment as hemostats, sutures, needles, hypodermics, etc., into the hands of the layman. For anyone in charge of a group twenty-four hours or more from further medical aid who has been instructed by an expert in the use and dangers of the recommended procedures, the book goes into detail for treatment far beyond the field of the person who has a physician within a few hours' call.

The format of the book makes for quick and easy reference. The symptoms are listed clearly and in good detail for differentiation of treatment. The order of approach to subjects is excellent. The chapter on poisons, especially the lists and illustrations of plants containing natural poisons, could be studied with profit by many doctors called on to treat children who chew leaves. Poor proofreading has left several instances where figures referred to have no relation to the subject under discussion. The author might have simplified his book for the average layman by mentioning fewer antiseptics and drugs. But then the book is not written as a reference for the average layman but as a text for a student who will have from thirty to fifty hours' instruction and "Laboratory work" and who has some physiological background and still more judgment.

M. K. CARY.

Physical Medicine. The Employment of Physical Agents for Diagnosis and Therapy. By FRANK H. KRUSEN, M.D., F.A.C.P., Associate Professor of Physical Medicine, the Mayo Foundation, University of Minnesota; Head of the Section on Physical Therapy, the Mayo Clinic; Member of the Council on Physical Therapy of the American Medical Association; Past President of the American Congress of Physical Therapy; Past President of the Academy of Physical Medicine. W. B. Saunders Company. Philadelphia. 1941. Octavo of 846 pages, with 351 illustrations. Cloth. Price \$10.00.

Dr. Krusen has done a superb piece of work in placing in one readable volume most of the important features of Physical Therapy as it should be practiced today. The organization of the material, combined with an exhaustive index, makes reference to any desired subject rapid. Conflicting points of view are presented but the author wisely states

what seems to him to be the most reasonable view, thus leaving the reader in no doubt as to the author's opinion.

The general practitioner will find this to be the "answer to his prayer" for a good book on Physical Therapy; in it he will find many practical points which will assist him in the proper use of Physical Medicine. The internist, surgeon, orthopedist, and physical therapist also will find this to be a most valuable aid in their work. The medical student will find that this book provides the much desired orientation in this field which forms the bridge between medical science and physical science.

Comprehensive bibliographies following each chapter add immeasurably to the value of this book. It is in truth a small reference library of Physical Medicine. For anyone interested in Physical Therapy or any phase of this field, this book is recommended.

BEN L. BOYNTON.

Synopsis of Materia Medica, Toxicology, and Pharmacology. For Students and Practitioners of Medicine. By FORREST RAMON DAVISON, B.A., M.Sc., Ph.D., M.B., Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock. St. Louis. The C. V. Mosby Company. 1940. 633 pages with 45 illustrations, including 4 in color. Cloth. Price, \$5.00.

This new book on pharmacology is intended to be a brief discussion concerning those drugs essential for the student of medicine and the practicing physician. While there are errors which are inherent in the preparation of any manuscript, all in all the book is very well written and in keeping with modern pharmacological thought. In this day, when there is such a great need for physicians to become more familiar with pharmacologic principles, a suitable modern text dealing with pharmacology should be available to every practitioner. Not as brief as its name might indicate, the book covers more or less the same material and to the same extent as is the case with such standard books as Sollmann, Cushny, Bastedo, and McGuigan. If the physician has not access to a copy of one of the last mentioned texts, he will find this present publication generally equally satisfactory.

H. B. HAAG, M.D.

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Editorial

Diet and National Defense.

Russell M. Wilder, at the recent meeting of the American College of Physicians in Boston, presented an interesting national nutritional program. Commenting upon the deficiencies in the American diet and the remarkably effective results in Germany of a nationally controlled diet, he brought out the well-known facts that our people eat too little meat, drink too little milk and consume too much sugar. His program in summary was to supply all of the essential components of the Vitamin B complex in flour by fortifying it with thiamin chloride, riboflavin, nicotinic acid and iron, and to supply sufficient Vitamin A and D to the consumer, whatever his economic level, by fortifying the processed fats, such as oleomargarin and the lards, with the addition of Vitamins A and D. He would recognize that the too great sugar consumption would continue but he would require the makers of sugar to incorporate in it dried milk powder which would add both protein and calcium to the diet without greatly disturbing the taste or appearance of the sugar. If citrus fruits and iodized salt were added a national diet would be attained which would guarantee maximum efficiency in a population which he believed might soon be called upon to fight for its life.

Panel Discussions.

Medical societies and those in charge of programs for their meetings are constantly in search of new and better ways of bringing the progress of medicine to the attention of their members. The reading and discussion of papers seem to have become standardized. Innovations took first the form of symposia, then of round table discussions, lately of panel discussions.

The Medical Society of Virginia will try for the first time at its Virginia Beach meeting the panel discussion in place of the round table discussion. Three physicians will take part in each panel, one acting as leader, the other two as his assistants. The leader will read questions which have been sent to him by members of the society prior to the meeting and will call upon his assistants to discuss them. Sometimes he will discuss them himself. If a question is controversial, one assistant may take one point of view, the other, another, and the leader may side with either or against both. When written questions are exhausted, questions from the floor will be in order. Panel discussions have the advantage of cutting short extraneous talking and of offering more than one expert. On the whole, a panel discussion should give a rapidly moving and constructive type of conference.

The N. P. C.

The National Physicians' Committee for the Extension of Medical Service is a voluntary, non-political and non-profit making organization dedicated to the task of making more widespread the distribution of the most effective methods and equipment in medicine and surgery, and of familiarizing the public with the values, methods and achievements of American medicine.

In a recent publication it calls attention to the verdict handed the A. M. A. by a Federal jury in Washington, D. C., a verdict which said, in effect, that "organized medicine had entered into a conspiracy—a criminal conspiracy—but that there were no conspirators"; that "A crime had been committed—but that there were no criminals"; that "Trade had been unlawfully restrained—but that none were responsible for the restraint."

The N. P. C. summarized the issues involved in this Federal Court action as follows: "(a) The exclusive right of physicians to 'practice medicine.' Presumably, a layman or a lay organization should have the legal right to provide medical service. (b) The right of physicians to control or influence the qualifications of physicians on hospital staffs or the qualifications of physicians to be granted courtesy privileges in hospitals. (c) The right of physicians to control or importantly influence conditions in hospitals under which intern training is provided. (d) The right of physicians to determine educational and ethical standards that shall qualify individuals for the rendering of medical service."

The N. P. C. maintains that these are basic rights, essential to the safeguarding of the public and that since they have been questioned every physician must aid in the required solution, which in its opinion has two parts: "First, American Medicine must be given authority from the court of final jurisdiction, for a code of conduct. This authorization must define the extent and the nature of such controls.

"The next step in the process of securing this authorization is a new trial of the A. M. A. suit in the Federal District Court, or an appeal to the Appellate Court and finally an appeal, if necessary, to the Supreme Court of the United States.

"This is the responsibility of the A. M. A. Already, the necessary steps have been taken. Regardless of time, energy, or expense involved, there will be no retreat or compromise until all of the issues

have been settled by the authority with final jurisdiction.

"Second, The public must be made aware of its vital interest in this all-important issue."

The N. P. C. maintains that if the American public really realized how serious was the threat to traditional medicine as they have known and profited by it in this country they would turn thumbs down on a movement that is designed to completely alter its whole structure. The committee is doing all within its power to bring to public attention the true facts of what American medicine has stood out for in its diligent search for a method of better serving the indigent and lower income groups and in extending to all persons a more effective health service.

The committee points out that Labor, by acting collectively in its own interest exacts enormous annual contributions from its membership to establish defense funds that have made it invulnerable not only to public opinion but to legal restraint. Medicine needs to learn some of these lessons of collective action, but it proposes to avoid the compulsion exercised by the unions on its members.

Sulfanilylguanidine and Sulfadiazine.

With fascinating fecundity the sulfonamids continue to produce offspring of increasing bacteriostatic and bacteriocidal power. In the treatment of the bacillary infections of the intestinal tract, sulfanilylguanidine gives great promise. There are reports that it is being used by the British in Egypt with notable success. It is a readily soluble, rapidly excreted sulfonamid of low absorptive qualities in the intestinal tract where acetylation does not occur. Its theoretical possibilities were first investigated by Marshall and reported in the Bulletin of the Johns Hopkins Hospital (September, 1940).

Another most interesting derivative is sulfadiazine which is being evaluated clinically at the present time, especially in the treatment of pneumonia. It is apparently a useful, safe and simple drug of low toxicity, and great penetrability, with the ability of reaching high concentrations in the blood and tissues without injurious effects. It has been employed chiefly in pneumococcus infections where it has been found to be as effective as sulfapyridine without showing any of sulfapyridine's untoward effects.

At the recent meeting of the American College of Physicians in Boston, Bullowa, Finland and Blake

endorsed it unanimously as probably the best of all the drugs so far developed for the treatment of pneumonia. Finland treated 178 run-of-the-mine cases of pneumonia in the Boston City Hospital with a mortality of 10.7 per cent. Bullowa stated that in patients under fifty years of age his mortality was only 3 per cent. It was agreed that with the new type of

chemotherapy practically every one under forty years of age who is treated early enough and in proper dosage gets well. An initial dose of 4 grams should be given, to be followed by 1 gram every four hours until recovery. Sulfadiazine also gives promise of being an effective chemotherapeutic agent in staphylococcal and streptococcal infections.

Department of Clinical and Medical Education of the Medical Society of Virginia

Summer Short Course.

The second summer short course in Recent Advances in Medicine will be held at the University of Virginia Hospital the week of June 16 to 21. A list of eighty proposed topics was recently mailed to Virginia doctors with the request that they indicate those they would like to have discussed. Enrollment will be limited to fifty doctors this year. Instructors will be drawn from the entire staff of the Department of Medicine. The sessions will be devoted to four lectures each morning followed by clinics, ward rounds, and demonstrations in the afternoons. Evenings will be devoted to conferences, moving pictures and a banquet. Registration should be completed before June 10 through Dr. Staige Blackford, Chairman of the Committee on Postgraduate Clinics, Box 1174, Charlottesville, Virginia.

Local Courses.

A postgraduate course in Medicine and Surgery was held in Hampton and Newport News during March and April. This course was given at the request of the Elizabeth City County Medical Society. The full program was as follows:

ARTHRITIS—Dr. Oscar Swineford, University of Virginia.
CARDIAC IRREGULARITIES—Dr. J. Edwin Wood, University of Virginia.

SURGICAL ASPECTS OF SCIATICA—Dr. J. M. Meredith, University of Virginia.

THE ANEMIAS—Dr. Powell Williams, Medical College of Virginia.

CANCER OF THE CERVIX—Dr. William Henry Parker, University of Virginia.

SIMPLIFIED TREATMENT OF CERTAIN FRACTURES—Dr. Robert V. Funsten, University of Virginia.

The doctors attending one or more of the six meetings were as follows:

Dr. E. L. Alexander, Newport News.
Dr. O. T. Amory, Newport News.
Dr. Burl Bassette, Hampton.
Dr. M. B. Beecroft, Newport News.
Dr. C. D. Bradley, Kecoughtan.
Dr. Harvey G. Bland, Newport News.
Dr. A. A. Creecy, Newport News.
Dr. R. A. Davis, Newport News.
Dr. R. H. Edwards, Newport News.
Dr. J. B. Homan, Langley Field.
Dr. W. H. Howard, Hampton.
Dr. H. D. Howe, Hampton.
Dr. W. S. Hunt, Fort Monroe.
Dr. E. S. Jones, Hampton.
Dr. F. A. Kearney, Hampton.
Dr. Benedict Kudish, Fort Monroe.
Dr. R. A. B. Lloyd, Phoebus.
Dr. I. B. McEachin, Newport News.
Dr. J. L. Mann, Hampton.
Dr. J. E. Marable, Newport News.
Dr. E. B. Mewborne, Newport News.
Dr. R. B. Newman, Hampton.
Dr. Paul J. Parker, Hampton.
Dr. R. T. Pierce, Newport News.
Dr. W. J. Pijanowsky, Newport News.
Dr. J. W. Sayre, Newport News.
Dr. A. T. Scott.
Dr. G. B. D. Stephens, Newport News.
Dr. N. L. Smallens, Langley Field.
Dr. Willard P. Smith, Hampton.
Dr. G. C. Tyler, Newport News.
Dr. O. W. Ward, Phoebus.
Dr. R. H. Wright, Phoebus.
Dr. Seymour Zaller, Kecoughtan.

The Loudoun County Medical Society also is conducting a postgraduate course during the month of May. The following is the program for this course of meetings which are being held in the Loudoun County Hospital at Leesburg on Thursday evenings:

INFANT FEEDING—Dr. Jay M. Arena, Duke University.
TOXEMIAS OF PREGNANCY—Dr. Tiffany Williams, University of Virginia.

OFFICE PRACTICE OF GYNECOLOGY—Dr. R. A. Ross, Duke University.

NEWER PHASES OF PNEUMONIA TREATMENT—Dr. H. B. Mulholland, University of Virginia.

MANAGEMENT OF HEAD INJURIES—Dr. John M. Meredith, University of Virginia.

HYPERTENSION IN YOUNG ADULTS—Dr. Harry Walker, Medical College of Virginia.

Spring Clinics.

UNIVERSITY OF VIRGINIA

The twenty-seventh Postgraduate Clinic of the University of Virginia Department of Medicine was held at Charlottesville on Friday, April 11. Members of the staff presented a *Symposium on Therapy*.

Doctors attending the Clinic were as follows:

Dr. L. H. Apperson, Richmond.
Dr. Howard Armstrong, Harrisonburg.
Dr. H. L. Baptist, Ivy.
Dr. C. D. Bennett, Chatham.
Dr. C. L. Booker, Lottsburg.
Dr. R. E. Booker, Lottsburg.
Dr. L. M. Braswell, Lynchburg.
Dr. Alfred Burger, University of Virginia.
Dr. O. K. Burnette, Culpeper.
Dr. A. C. Byers, Harrisonburg.
Dr. H. G. Byrd, Louisa.
Dr. F. L. Byers, Harrisonburg.
Dr. G. C. Campbell, Staunton.
Dr. F. T. Cassiday, Fredericksburg.
Dr. H. T. Chelf, Culpeper.
Dr. Homer E. Clarke, Massie's Mill.
Dr. Elizabeth Cole, Norfolk.
Dr. John E. Cole, Fredericksburg.
Dr. J. C. Coulter, Charlottesville.
Dr. H. S. Daniel, Louisa.
Dr. C. O. Dearmont, White Post.
Dr. J. W. Devine, Jr., Lynchburg.
Dr. S. F. Driver, Troutville.
Dr. T. S. Englar, Charlottesville.
Dr. E. F. Flora, Roanoke.
Dr. J. E. Gardner, Roanoke.
Dr. M. T. Garrett, Waynesboro.
Dr. C. F. K. Gaylord, Staunton.
Dr. D. M. Gibbs, Front Royal.
Dr. J. T. Gill, Richmond.
Dr. M. M. Gordon, Martinsville.
Dr. R. S. Griffith, Waynesboro.
Dr. E. A. Harper, Lynchburg.
Dr. W. F. Hartman, Swoope.
Dr. M. B. Hiden, Leesburg.
Dr. R. B. Hightower, Washington, D. C.
Dr. H. G. Hudnall, Covington.
Dr. H. B. Hutt, Alexandria.
Dr. C. H. Iden, Berryville.
Dr. R. Walter Johnson, Lynchburg.

Dr. Thomas E. Jones, Charlottesville.
Dr. H. W. Judd, Mineral.
Dr. J. Paul Kent, Altavista.
Dr. J. P. King, Radford.
Dr. W. A. Kyger, Free Union.
Dr. L. Long, Jr., Charlottesville.
Dr. Anita Lotti, Charlottesville.
Dr. Florence Mahoney, Staunton.
Dr. G. R. Minor, Charlottesville.
Dr. Carleton Moorman, Altavista.
Dr. E. B. Morgan, Fincastle.
Dr. J. O. Mundy, Charlottesville.
Dr. J. A. Murphy, Washington, D. C.
Dr. Dan O. Nichols, Charlottesville.
Dr. Wm. J. Olds, Front Royal.
Dr. W. H. Paine, Charlottesville.
Dr. Marshall J. Payne, Staunton.
Dr. C. G. Pearson, Charlottesville.
Dr. B. F. Randolph, Arrington.
Dr. A. C. Ray, Ashland.
Dr. B. A. Rice, Forest.
Dr. J. H. Roberts, Roanoke.
Dr. A. F. Robertson, Staunton.
Dr. E. B. Robertson, Danville.
Dr. W. H. Saunders, Roanoke.
Dr. Ernest Scott, Lynchburg.
Dr. O. N. Shelton, Orange.
Dr. E. W. Stratton, Charlottesville.
Dr. J. L. Stringfellow, Culpeper.
Dr. G. V. Thompson, Chatham.
Dr. J. A. M. Thompson, Charlottesville.
Dr. W. M. Tunstall, Covington.
Dr. W. H. Turner, Round Hill.
Dr. M. H. Urner, Charlottesville.
Dr. C. M. Vaughan, Harrisonburg.
Dr. C. J. Waller, Staunton.
Dr. W. R. Watkins, South Boston.
Dr. C. E. Watson, Broadway.
Dr. J. W. White, Luray.
Dr. H. P. Williams, Martinsville.
Dr. S. H. Williams, Alexandria.
Dr. J. L. Wright, Harrisonburg.
Dr. W. P. Yancey, Roanoke.

MEDICAL COLLEGE OF VIRGINIA

The annual Spring Postgraduate Clinic of the Medical College of Virginia was held at Richmond, April 25th, in connection with the Stuart McGuire Lectures. The following registered attendance:

Dr. L. H. Apperson, Richmond.
Dr. E. M. Babb, Ivor.
Dr. E. Barksdale, Lynchburg.
Dr. Q. H. Barney, Altavista.
Dr. Henry K. Beecher, Mass. General Hospital, Boston, Mass.
Capt. Bernard Sherman, Camp Lee.
Dr. Alfred Blalock, Vanderbilt University, Nashville, Tenn.
Lt. Harry Boas, Camp Lee.

Dr. Mary B. Baughman, Richmond.
 Dr. L. R. Broster, Charing Cross Hospital, London,
 England.
 Lt. A. S. Browdie, Camp Lee.
 Dr. S. W. Brown, Camp Lee.
 Dr. H. G. Byrd, Louisa.
 Dr. B. L. Carleton, Newport News.
 Dr. L. L. Clark, Chester.
 Dr. George B. Craddock, Lynchburg.
 Dr. J. G. Cutler, Camp Lee.
 Dr. H. S. Daniel, Louisa.
 Dr. A. C. Davis, Roanoke.
 Dr. Fred F. Davis, Roanoke.
 Dr. J. S. DeJarnette, Staunton.
 Dr. R. G. Elliott, Camp Lee.
 Dr. J. W. Freed, Staunton.
 Dr. D. S. Garner, Roanoke.
 Miss Dorothy Gayniar, Richmond.
 Dr. James A. Grizzard, Drewryville.
 Lt. L. J. Hampton, Camp Lee.
 Dr. R. L. Hillman, Emory.
 Dr. James M. Habel, Jetersville.
 Dr. Paul Howle, Richmond.
 Dr. J. D. Hutchins, Camp Lee.
 Dr. Mary Johnston, Tazewell.
 Lt. Carl Kritzer, Camp Lee.
 Dr. L. P. Jones, Emporia.
 Dr. E. C. Jamison, Rocky Mount.
 Dr. Karl Lippert, Lancaster, S. C.
 Dr. R. G. McAliley, Atlanta, Ga.
 Dr. J. Y. McCain, Camp Lee.
 Dr. William McKibben, Miami, Fla.
 Dr. M. E. McRae, Chatham.

Dr. H. L. Mannheim, Richmond.
 Dr. Douglas Martin, Tampa, Fla.
 Dr. C. H. Maxwell, Camp Lee.
 Dr. Carleton Moorman, Altavista.
 Dr. E. R. Moorman, Kilmarnock.
 Dr. G. S. Osincup, Orlando, Fla.
 J. S. Pierce, Richmond.
 Dr. Charles W. Putney, Staunton.
 Dr. A. J. Rarick, Camp Lee.
 Dr. I. Rifkin, Richmond.
 Dr. William Robinson, Richmond.
 Dr. M. P. Rucker, Richmond.
 Lt. G. F. Salle, Camp Lee.
 Dr. S. J. Saunders, Staunton.
 Dr. B. S. Shapley, Camp Lee.
 Lt. Ed. Sharp, Camp Lee.
 Dr. H. B. Showalter, Kenbridge.
 Lt. Harold Sisson, Camp Lee.
 Lt. W. S. Sloan, Camp Lee.
 Dr. W. P. Starling, Roseboro, N. C.
 Dr. H. U. Stephenson, Richmond.
 Dr. W. R. Tyson, Norfolk.
 Braxton Valentine, Richmond.
 Dr. W. C. Vernocy, Camp Lee.
 Dr. B. W. Wilkinson, Clarksburg, W. Va.
 Dr. John S. Wolf, Camp Lee.

Many members of the faculties of both colleges, not participating in the program were also registered.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

The Tazewell County Medical Society

Held its regular bi-monthly meeting on May 8th in Tazewell. The program consisted of two papers on syphilis and its control—the first by Dr. Edward Holmes of the State Department of Health outlined the present-day concept of the handling of syphilis, and the second by Dr. J. S. Pearson, Jewell Ridge, was on the incidence of syphilis in industrial practice. Delegate and alternate to the state medical meeting were named at this time.

Plans are being made to entertain the members of the Mercer County (W. Va.) Medical Society at a buffet supper on June 26th, at the Tazewell County Country Club, at which time Dr. Walter B. Martin, president of the Medical Society of Virginia, will be the speaker.

MARY ELIZABETH JOHNSTON,
Secretary.

Roanoke Academy of Medicine.

At the regular meeting of the Academy on May 5th, the following officers were elected to take office October 1: President. Dr. M. H. Williams; vice-presidents, Drs. D. B. Stuart and A. M. Groseclose; and secretary-treasurer, Dr. H. B. Stone, Jr. All are of Roanoke.

New members were elected as follows: Dr. Elizabeth Lee, Dr. Julien H. Meyer, Dr. Grover C. Godwin, and Dr. June U. Gunter.

There were approximately sixty-five members in attendance. Refreshments followed the meeting.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Gloucester Courthouse on April 22nd, at which time the following program was presented: Report on Gall-blad-

der Operation by Dr. O. T. Amory; A Case of Vaginal Atresia by Dr. Russell Buxton; and A Case of Undescended Testicle by Dr. A. A. Creecy. All speakers are from Newport News.

The next meeting will be held in Urbanna the fourth Tuesday in July.

Dr. J. M. Gouldin of Tappahannock is president of this Society and Dr. M. H. Harris, West Point, secretary.

The Medical Society of Northern Virginia

Met at New Market on April 8th. At the business session, several doctors were admitted to membership. Dr. James Rountree of Woodstock presented a paper on Injuries to Intervertebral Discs and Spinal Ligaments, and Dr. Leslie M. Bell of Winchester gave a

paper on The Use of Iodine in the Treatment of Goiter. Luncheon followed the meeting.

Dr. J. B. McKee and Dr. J. E. Harris, both of Winchester, are president and secretary-treasurer, respectively.

The Amelia County Medical Society,

An active unit of the Fourth District and Southside Virginia Medical Society, held its annual meeting on April 24th, and elected the following officers for the ensuing year: president, Dr. G. Craig Eggleston, Amelia; vice-president, Dr. W. L. Davenport, Amelia; and secretary-treasurer, Dr. James L. Hamner (re-elected), Mannboro. Delegate and alternate to the State Society meeting were also elected at this time.

News Notes

Annual Meeting of the Medical Society of Virginia.

Indications are that there will be good attendance at the meeting of the State Society at Virginia Beach, October 6th-8th. Reservations should be made promptly by those who have a choice in their selection of a hotel. Names of the hotels open in the Fall, with rates, were published in the last issue of the MONTHLY. The Committee on Arrangements, composed of doctors from the Princess Anne and the Norfolk County Medical Societies, is working hard for the success of this meeting. Let's lend a hand and make this one of the best meetings ever by attending and taking part in the activities.

Each component society is urged to send its full quota of delegates for the business sessions.

American College of Physicians.

The twenty-fifth annual session was held in Boston, Mass., April 21-25, under the presidency of Dr. James D. Bruce, Ann Arbor, Mich. The program included symposia on Military Medicine and on Nutrition. The panel discussions and clinics proved especially interesting.

During this session announcements were made concerning the participation of the American College of Physicians in the program of national preparedness. Through grants made by the college to the National Research Council, Committee on Medicine, an extensive program is being carried on by Dr. James E.

Paullin, of Atlanta, Ga., in connection with the classification of internists with regard to ability and availability for military service, the listings being turned over to the Surgeons General.

Through another grant by the College to the National Research Council, Committee on Medicine, the sum of \$10,000 has been made available for special research projects which may be of value to our armed forces. The first project for which an assignment of these funds has been made was to Dr. Edwin Cohn, of Harvard University, for an investigation of the possibilities of utilizing fractions of bovine plasma in connection with transfusions into humans.

As a feature, aside from medicine, the Trustees and the Conductor, Serge Koussevitsky, of the Boston Symphony Orchestra, gave an exclusive and complimentary concert for the members assembled in Boston. In appreciation, the College presented Dr. Koussevitsky with a testimonial, signed by the President and Secretary General.

There were 306 physicians inducted to Fellowship, the following Virginians being in this group:

Dr. Staige Davis Blackford, Charlottesville.

Dr. Kenneth Dawson Graves, Roanoke.

Dr. Edward Bruce Mewborne, Newport News.

Dr. Collins Denny Nofsinger, Roanoke.

Dr. Oscar Swineford, Jr., Charlottesville.

Dr. Julian Ruffin Beckwith, Charlottesville, and Dr. Lewis T. Stoneburner, III, Richmond, were elected to associateship.

This was the first occasion on which the College membership was extended to Cuba, and twelve outstanding physicians, all connected with the University of Havana, qualified.

Dr. Roger I. Lee, Boston, succeeded to the presidency, and the following officers were elected: president-elect, Dr. James E. Paullin, Atlanta, Ga.; vice-presidents, Dr. D. Sclater Lewis, Montreal, Que.; Dr. Thomas T. Holt, Wichita, Kan.; and Dr. Samuel E. Munson, Springfield, Ill. Dr. Wm. D. Stroud, Dr. George M. Piersol, and Mr. E. R. Loveland, all of Philadelphia, were re-elected treasurer, secretary general, and executive secretary, respectively.

The next annual session will be held in St. Paul, Minn., and the tentative dates are April 20-24, 1942.

Personnel Changes in State Department of Health.

Dr. James M. Suter, Health Officer of the Washington-Bristol Health Department, has been called to military duty. He discontinued his duties with the State Health Department on April 16th.

Dr. Charles L. Savage, Health Officer of Hanover County, resigned as of April 26th to enter the field of industrial medicine. Dr. John D. Hamner, formerly Health Officer of Southampton County, succeeded Dr. Savage as Health Officer of Hanover County.

Dr. Hubert D. Crow, formerly Assistant Health Officer of the Brunswick-Greensville-Mecklenburg Health District at Lawrenceville, has been transferred to Southampton County as Health Officer.

Dr. William P. Terry, Health Officer of Charlotte County, has been called to military service and will leave for his new duties on June 16th.

Dr. Hugh H. Trout,

Roanoke, was the guest speaker at an initiation banquet of the Brown-Sequard Chapter, Alpha Omega Alpha, of the Medical College of Virginia on May 7th.

Ex-Internes Association of the Medical College of Virginia

Met in Richmond on April 23rd, at the time of the Stuart McGuire lectures and the Spring Postgraduate Course of the college. There was an attendance of approximately 100 former internes. The following officers were elected: president, Dr. James T. Tucker; vice-president, Dr. Charles Nelson; and

secretary, Dr. Nathan Bloom (re-elected). All officers are of Richmond.

The Society of Neurological Surgeons

Met in Richmond on May 1st, 2nd and 3rd, with the largest attendance in its history, the members and guests representing the larger universities in the United States and Canada. In the absence of the president, Dr. Howard W. Fleming of San Francisco, Dr. C. C. Coleman, the Virginia member, acted as host and presided over the scientific sessions. The program consisted of operations and scientific papers on the first and second days at the Medical College of Virginia and its hospitals. A feature of these was the participation in the program by three ex-residents in neurosurgery of the college—Dr. James G. Lyerly of Jacksonville, Fla.; Dr. Frank Mayfield of Cincinnati; and Dr. J. M. Meredith of the University of Virginia. At this time, also an interesting report was made by Dr. Howard C. Naffziger, professor of surgery at the University of California, on Neurosurgical Preparedness in our Medical Defense Program.

Dr. J. Jay Keegan of Omaha, Nebr., was elected president for the coming year, Dr. Wilder G. Penfield of Montreal, Canada, vice-president, and Dr. Winchell McK. Craig, of the Mayo Clinic, Rochester, Minn., secretary-treasurer. Boston, Mass., was selected as the 1942 place of meeting.

The last day of the convention was given over to a sight-seeing trip to Williamsburg, Jamestown and Yorktown.

Medical College of Virginia News.

Commencement exercises closing the one hundred third session of the college will be held June 3, 1941.

There are one hundred seventy-two candidates for graduation: seventy-four in medicine, thirty-five in dentistry, twenty-nine in pharmacy, and thirty-four in nursing.

Dr. Theodore Meyer Greene, McCosh Professor of Philosophy, Princeton University, will deliver the Commencement address.

Dr. William Newton Hodgkin, an alumnus of the school of dentistry of the college, class of 1912, and a member of the Council on Dental Education of the American Dental Association, will be awarded the honorary degree of Doctor of Science at the Commencement exercises.

The Commencement sermon will be given by Dr. Vincent C. Franks, Pastor, Saint Paul's Church, Richmond.

News From University of Virginia, Department of Medicine.

Dr. Edwin P. Lehman participated in a Postgraduate Course in Surgery conducted in Waycross, Georgia. The following discussions were presented: April 7th, Surgical Shock; April 9th, Water Balance in Surgery; April 10th, The Significance of the Cholecystogram; and on April 11th, Hyperthyroidism. At a meeting of the Eighth District Medical Society of Georgia on April 8th, he spoke on the subject, Heparin in the Prevention of Peritoneal Adhesions.

Dr. D. C. Smith attended the meeting of the American Dermatological Association in New Orleans and on April 10th presented a paper on Acanthosis Nigricans.

On April 15th, D. E. C. Drash addressed the Rockingham Tuberculosis Association and the members of the School of Nursing of the Rockingham Memorial Hospital in Harrisonburg. His subject was The Conquest Against Tuberculosis.

On April 15th, Dr. Sydney W. Britton gave a lecture before the Staff and Graduate School of Iowa State College at Ames, Iowa. He spoke on Form and Function in Primitive Mammals.

At the meeting of the American Physiological Society in Chicago on April 18th, Drs. E. L. Corey and S. W. Britton presented a paper entitled The Antagonistic Action of Desoxycorticosterone and the Antidiuretic Principle of the Posterior Pituitary Gland.

Dr. Lawrence T. Royster attended the Region No. 2 meeting of the American Academy of Pediatrics in Richmond and on April 25th gave a broadcast for the Academy on the subject, The Importance of Periodic Examination of Children.

Dr. John M. Meredith attended the meeting of the American Society of Neurological Surgeons in Richmond on May 1st and 2nd and read a paper on Experimental Head Injuries: a. The Inefficacy of Lumbar Puncture for the Removal of Erythrocytes from the Spinal Fluid; b. Can the Site and Degree of Intracranial Trauma Be Determined By Spinal Fluid Erythrocyte Counts?

At the meetings of the Virginia Academy of Science in Richmond on May 1st to 3rd, the following members of the Faculty of the Department of Medicine of the University of Virginia presented papers: The Synchronization of Cerebro-Cortical Potentials by Dr. Charlton Gilmore Holland, Jr.; Study of a Case of Osteosclerosis with Myeloid Leukemia, with Special Reference to the Extensive Extramedullary Blood Formation by Drs. H. E. Jordan and James K. Scott; Autopassive Local Sensitization and Desensitization by Drs. Oscar Swineford, Jr., and W. Roy Mason, Jr.; Chemistry and Sulfonamide Drugs by Dr. Alfred Chanutin; Heparin and Peritoneal Adhesions by Dr. Floyd Boys; and An Analysis of Hormonal Influences on Fluid Balance by Drs. S. W. Britton and E. L. Corey.

Dr. Charlton Gilmore Holland, Jr. attended the organization meeting of the American Federation for Clinical Research in Atlantic City on May 5th and discussed his work on Electroencephalographic Studies in Myoclonia.

On May 6th, Drs. J. Edwin Wood, James K. Scott and John L. Guerrant presented a paper on Further Observations on Blood Pressure, Weight and Diet in Normal Hypertensive Dogs, at the meeting of the Association of American Physicians.

Drs. George C. Ham and Eugene M. Landis attended the meeting of the American Society for Clinical Investigation in Atlantic City and delivered a paper on A Comparison of Pituitrin and Antidiuretic Substance in Human Urine and Placenta.

Dr. W. M. Craig, Professor of Neurosurgery at the Mayo Clinic, visited the Medical School on May 5th.

The Department of Physiology was awarded a research grant of \$2,000 by the Committee on Research in Endocrinology of the National Research Council, for investigations on the function of the suprarenal under the direction of Dr. Sydney W. Britton.

On May 7th, Dr. Staige Davis Blackford addressed the Augusta County Medical Association on the subject, Medical Treatment of Peptic Ulcer.

At the meeting of the West Virginia State Medical Association in Charleston on May 14th, Dr. T. J. Williams spoke on The Management of the Toxemias of Late Pregnancy. On May 15th, he ad-

dressed the West Virginia Obstetrical and Gynecological Society on the subject, Experience in Postpartum Sterilization.

On May 1st, Dr. T. J. Williams participated in the Postgraduate Course in Medicine and Surgery for the Loudoun County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Toxemias of Pregnancy. On May 15th, Dr. H. B. Mulholland discussed The Newer Phases of Pneumonia Treatment.

At the meeting of the American Psychiatric Association in Richmond on May 5th, Drs. David C. Wilson and Charlton Gilmore Holland, Jr. presented a joint paper on Electroencephalographic Studies in Myoclonia.

Dr. C. M. Caravati,

Richmond, is now in Baltimore at The Johns-Hopkins Hospital where he is working in the Department of Gastro-Enterology and Nutrition. After several months away he expects to return to Richmond to continue practice and to limit it to this specialized field.

Dr. Leslie M. Bell

Has recently located in Winchester, where he is associated with Dr. James A. Miller and limiting his practice to surgery and gynecology. Dr. Bell is an alumnus of the Harvard Medical School, class of '35, following which he served as house officer for a year in the New England Deaconess Hospital, Boston. Later, he served a three-year internship in surgery and gynecology at the Roosevelt Hospital, New York, after which he was for two years on the surgical staff of the Massachusetts Memorial Hospital and the Boston University Medical School, where he was first assistant to Dr. Howard M. Clute.

Dr. Algerd Powell,

Recently of Roanoke where he was assistant medical examiner for the Norfolk and Western Railway Company, has located in Buena Vista, in the offices of the late Dr. F. L. Thurman, and is engaged in general practice. Dr. Powell is a graduate of the New York Medical College and later interned at the U. S. Marine Hospital, Norfolk.

The Virginia Society of Ophthalmology and Oto-laryngology

Held its twenty-second annual meeting in Rich-

mond on May 10th, under the presidency of Dr. G. G. Hankins, Newport News. Officers were elected as follows: president, Dr. Mortimer H. Williams, Roanoke; president-elect, Dr. Guy Fisher, Staunton; and secretary-treasurer, Dr. Meade Edmunds, Petersburg. The next meeting will be held in Staunton in May, 1942.

American Psychiatric Association.

At the ninety-seventh annual meeting of this Association in Richmond, May 5th-9th, there was a registered attendance of 1,453—the largest number in the history of the organization. Dr. James K. Hall, Richmond, was installed as president; Dr. Arthur Ruggles, Providence, R. I., was named president-elect; and Dr. Winfred Overholser, Washington, was chosen secretary-treasurer.

Medical Section, Virginia Academy of Science.

At the meeting of the Academy in Richmond, early in May, Dr. J. E. Kindred, University of Virginia, was elected chairman of the medical section, with Dr. Guy Horsley, Richmond, being re-elected secretary-treasurer.

Dr. C. C. Coleman,

Richmond, has recently been appointed by Governor Price to the Board of Visitors of William and Mary College. He is also president of the Richmond Alumni Club of the college.

Hugh Mercer Apothecary Shop a Shrine.

Appropriate exercises on April the 30th marked the taking over of the Hugh Mercer Apothecary Shop in Fredericksburg by the American Pharmaceutical Association as a shrine to their profession. This is one of that city's most prized historical shrines, its customers including George Washington's mother, John Paul Jones of Revolutionary fame, and others. Dr. Mercer closed the shop at the beginning of the Revolutionary War to enter the army and was fatally wounded in the battle of Princeton.

Dr. Louise Fry Galvin

Has returned to her work in Richmond, after a month in New York, where she did special work in children's diseases at the Cornell Medical Center.

Dr. Linwood D. Keyser,

Roanoke, has just returned from Colorado Springs,

where he attended the American Urological Association of which he was a member of its executive committee. He was also chairman, this year, of the motion picture exhibits.

Dr. James Q. Gant, Jr.,

Class of '35, Medical College of Virginia, connected with the U. S. Public Health Service, has just been transferred to the Office of Dermatoses Investigations, National Institute of Health, Bethesda, Md.

Dr. and Mrs. William Lett Harris,

Of Norfolk, will spend July and August at Courtney Terrace, Virginia Beach.

St. Elizabeth's Hospital.

The twenty-ninth annual report of St. Elizabeth's Hospital, Richmond, recently published, includes a record of all patients admitted and treated at the hospital during 1940.

The report is arranged along the same general plan that has been used for several years, with the addition of a report from the Dietary Department, giving as one of the interesting features a summary of the special diet trays served throughout the year. The list of publications of the Staff and statistics of the Out-Patient Department and laboratory, as well as those of the School of Nursing, are in the first part of the report, followed by a record of the diagnosis and operation on all cases admitted. The usual critical resume of the deaths is in the last portion of the report.

The total number of patients admitted during 1940 showed an increase of 134 over 1939, the largest number of admissions during any year at this hospital. It is interesting to note that the average stay per patient during 1940 was one day less than that of 1939. There was a definite increase in surgery of the gastro-intestinal tract in 1940 over previous years, with almost twice as many gastric resections as in 1939. The number of appendectomies was 225, about the same as for the previous year, but there were five more drainage cases. There was also a definite increase in the number of rectal operations in 1940, with a total of 114, compared with eighty-four in 1939. The amount of prostatic surgery has increased; there were five prostatectomies and forty-one transurethral resections in 1940 compared with two prostatectomies and twenty-one transurethral resections in 1939.

There were fifty-two deaths in 1940, with thirty-six necropsies (69 per cent). Though this is a lower percentage of necropsies than for the past two years, it is still well above the average for a private hospital.

Dr. Mowey Presberg,

Recently with the Veterans Hospital in Roanoke, is now connected with the Veterans Administration Facility at Lyons, New Jersey.

Film Free for Use by Physicians.

Under the rules laid down by the American Academy of Pediatrics their new educational-to-the-public film, "When Bobby Goes to School", may be exhibited to the public by any licensed physician in the United States. All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Indiana. Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film.

"When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Directory of Medical Specialists.

Specialists eligible for listing in the forthcoming second edition of the Directory of Medical Specialists, 1942 edition, are urged to fill in and return promptly the questionnaires for biographic data just mailed them.

This Directory is the official publication of the Advisory Board for Medical Specialties, issued every two years, and listings are limited to those formally certified by any of the fifteen American Boards examining in the medical specialties. There is no charge for such listings. The second edition is now being prepared, and will be ready for distribution early in February, 1942, with biographic, geographic, and alphabetic listings of all diplomates certified to January 1, 1942. It will include approximately 18,000 names.

The Directing Editor is Paul Titus, M. D., 1015 Highland Building, Pittsburgh, Pennsylvania, and

the secretaries of the fifteen American Boards constitute the Editorial Board.

Wanted—

Physician. Preferably young man who has had some experience in psychiatry or who wishes to enter this field, as associate in psychiatric work at nervous and mental private hospital. An attractive position with opportunity if he succeeds in the work. Address "BXY", care of this journal. (*Adv.*)

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For Sale—

Treatment room furniture and sterilizer. Furniture is Aloe white Steeline, in very good condition, practically new. Sterilizer is large table size, in excellent condition. Owner now in Army Service, but arrangements may be made to see furniture. Address "L", care this journal. (*Adv.*)

Obituary Record

Dr. William T. Oppenheimer, Jr.,

Richmond, son of Dr. and Mrs. W. T. Oppenheimer of this city, died April the 20th, after a short illness. He was a native of this city and, upon completion of his academic education, entered the Medical College of Virginia, from which he graduated in 1917. He immediately entered the U. S. Navy and was active in that branch of the service during the World War. Upon completion of his service, he returned to Richmond and was engaged in practice with his father. He was a member of the

Medical Society of Virginia and of other professional and social organizations.

Dr. Aurelius Rives Shands, Sr.,

Prominent physician of Washington, D. C., died at his home in that city on April 27th. He was born in Petersburg on November 5, 1860, and received his medical degree from the University of Maryland in 1884. Dr. Shands became professor of orthopedic surgery at Columbia University (now George Washington University) in 1894 and at the time of his death held the title of professor emeritus. He was a member and past president of the American Orthopedic Association. Dr. Shands had been a member of the Medical Society of Virginia since 1894 and was elected to Honorary Membership in 1904. His wife and three sons, one of these Dr. A. R. Shands, Jr., of Wilmington, Delaware, survive him.

Resolutions on Dr. George J. Tompkins.

At a meeting of the Lynchburg Academy of Medicine, held at the Lynchburg General Hospital at 8:00 P. M. on May 5, 1941, the following resolution was unanimously adopted:

Whereas, Doctor George Johnson Tompkins, born at "Stono," Lexington, Va., March 27, 1873, a member and former President of this Academy, having practiced in Lynchburg since May 1, 1899, specializing in diseases of the eye, ear, nose and throat, departed this life on April 2, 1941.

BE IT THEREFORE RESOLVED that the Lynchburg Academy of Medicine express, by this resolution, its profound feeling of loss to its members and to this community in the death of Dr. Tompkins, who had served his friends, his profession and his community with fidelity, integrity and a skill tempered by wisdom; who had been active in his work in this Academy, in the Medical Society of Virginia, and in numerous local civic bodies; who had long served in the Lynchburg General Hospital, largely giving of his efforts there to the city's indigent, and in the clinic of the Junior League; who was a faithful member, vestryman and senior warden formerly in St. Paul's Episcopal Church and later in Grace Memorial Episcopal Church, in the establishment of which he had a large part; whose attitude toward his associates was an outstanding feature of his character; who showed to all who knew him a friendship, a tolerance, and a philosophy of life, that greater "peace between body and spirit", a way of service, a life of loyalty, a spirit that "shall cease to be never; birthless and deathless and changeless", and

BE IT FURTHER RESOLVED that a copy of this resolution shall be sent by the Secretary to the family of Dr. Tompkins as a memorial of the sympathy of this Academy in their great loss.

JAS. R. GORMAN
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Are the Neuritic Symptoms of Pregnancy *due to a deficiency* of vitamin B₁ (thiamine)?

SUCH common neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and (less frequent but more serious) paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Although neuronitis of pregnancy has long been considered a toxemia, no toxins have ever been identified.

Clinical observations of Strauss and McDonald lead to the conclusion that the condition is a dietary deficiency disorder similar to beriberi, caused by lack of vitamin B₁. They report recovery in their cases receiving this therapy, including dried brewers' yeast.

Hyperemesis as Cause of Avitaminosis

Wechsler observes that all cases of polyneuritis of pregnancy recorded in the literature were preceded by long periods of severe vomiting. "It would seem," he adds, "that because of actual starvation these patients suffered from avitaminosis and consequent neuritis," a view likewise held by Hirst, Luikart, and Gustafson. Plass and Mengert observe that the practice of giving high carbohydrate feedings for hyperemesis gravidarum is still more likely to cause avitaminosis.

Dried brewers' yeast, as it is far richer than any other food in vitamin B₁ (thiamine), is being used with benefit both in the prevention and treatment of polyneuritic symptoms of pregnancy. Lewy found that additions of yeast to the diet reduced electric irritability of the peripheral nerves and brought clinical improvement. Vorhaus states that he and his associates, after administering large amounts of vitamin B₁ (thiamine) to 250 patients having various types of neuritis, including that of pregnancy, observed in about 90% of cases "varying degrees of improvement, i.e., from partial relief of pain to complete disappearance of all symptoms."

Need for Vitamin B₁ (thiamine) in Lactation

Evans and Burr, Hartwell, Sure and co-workers, and Macy *et al* are among numerous authorities who find that the nursing mother also needs a supplement of vitamin B₁ (thiamine) from 3 to 5 times the normal requirement. It is accepted that during pregnancy and lactation the requirement for vitamin G (riboflavin) is increased.



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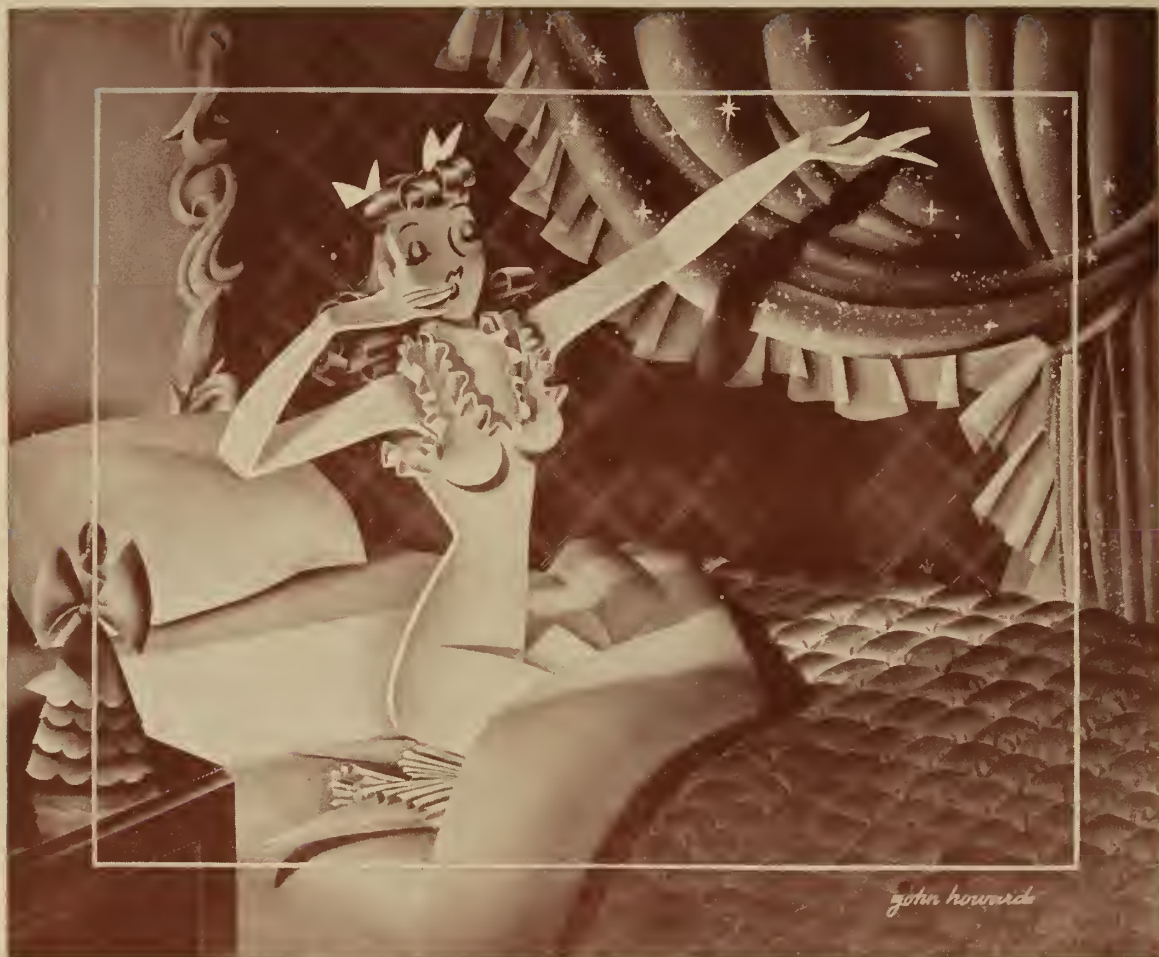
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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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Virginia Medical Monthly

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RICHMOND, VA., JULY, 1941

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THE ENDOCRINE THERAPY OF OVARIAN FAILURE.

E. C. HAMBLEN, M.D.,

and

R. L. PULLEN, M.D.,^{1, 2}

Durham, North Carolina.

Many aberrations in the function of the female sexual system have been related, by fact or by theory, to alterations in ovarian function. The result often has been the institution of a generous, enthusiastic and oftentimes uncritical organotherapy of the woman without the establishment of the diagnosis of ovarian failure. The existence of ovarian failure has been presumed commonly from the following symptomatology: vasomotor instability, headache, dysmenorrhea, irregularities of uterine bleeding, sexual incompatibilities such as frigidity, dyspareunia or vaginismus, sterility, nausea and vomiting of pregnancy or repeated spontaneous abortions. Further confirmation of impaired ovarian function has been considered to be the non-existence of organic pathology as revealed by a cursory diagnostic study. The presumptive diagnosis of ovarian failure has been further substantiated oftentimes by the enthusiastic advances of representatives of various pharmaceutical concerns eager to promote the sales of their respective products. The perpetuation of these three misconceptions concerning ovarian failure constitutes a picture of gynecic organotherapy at its worse.

DIAGNOSIS OF OVARIAN FAILURE

The rational therapy of ovarian failure is dependent upon the establishment of a correct diagnosis. The diagnosis of ovarian failure embraces three important facets, none of which is always easy to attain: (1) proof that the function of the ovaries is impaired; (2) the degree and the nature of the impairment; and (3) segregation of the etiological

factors underlying the ovarian failure. The prognosis and the therapy will be defined by these diagnostic data.

There are three established symptoms and signs of marked ovarian failure, none of which necessarily impairs health: (1) failure of occurrence or cessation of menstruation; (2) non-occurrence of sexual maturation or eventual regression changes in the sex organs; and (3) impaired fertility or sterility. That the symptomatology ascribable to ovarian failure does not impair health is noted in the two physiologic epochs of relative hypo-ovarianism: pre-adolescent hypo-ovarianism and post-climacteric senescence. The majority of women effect the diverse emotional, psychic and endocrine readjustments of the climacteric without the development of symptomatology sufficiently severe to interfere with their normal mode of living or to demand endocrine therapy designed to regulate the transitional alterations.

Pertinent information elicited from the history often establishes the diagnosis of ovarian failure, e.g., surgical extirpation of both ovaries, functional ovarian failure induced by roentgen-ray or radium, persistence of the non-development or retardation of the sexual system with delayed menarche in patients of post-adolescent or adult years, and the onset of the menopause in a woman of climacteric age. On the other hand, the assumption of the non-existence of ovarian failure is permitted when a woman is able to conceive, for the ability to become pregnant is the most reliable objective evidence of adequate ovarian function.

The diagnosis of ovarian failure is chiefly qualitative in nature, quantitative estimations of instances of relative or low grade ovarian function not being permitted by present diagnostic data. Two grades of ovarian failure may be determined: (1) corpus

1. From the Endocrine Division of the Department of Obstetrics and Gynecology, Duke University School of Medicine and Duke Hospital.

2. Presented by one of us (E.C.H.) at a meeting of the South Piedmont Medical Society, Danville, Va., April 16, 1941, and at a meeting of the Norfolk County Medical Society, April 28, 1941, the announced title for the latter presentation being "The Diagnosis and Treatment of Endocrine Sterility of the Female".

luteum failure (accepted generally to indicate failure of ovulation); and (2) estrogenic failure as denoted by inadequate estrogenic (follicular) activity for the development and the maintenance of the sexual organs and subsequent occurrence of uterine bleeding.

Corpus luteum failure may be determined by two criteria: (1) endometrial biopsy; and (2) pregnandiol titers. From the practical viewpoint, the endometrial biopsy represents the most efficient and simple diagnostic procedure for the determination of ovarian sterility, as manifested by failure of ovulation. Small representative portions of the endometrium are sampled by punch biopsy or suction within twelve to twenty-four hours after the onset of a spontaneous episode of uterine bleeding. These are fixed, mounted and stained by the usual hematoxylin-eosin method. If microscopic study reveals the absence of progestational (secretory) response in the endometrium with the persistence of the estrogenic (interval) phase, presumptive evidence is established that ovulation and corpus luteum activity have failed. It must be emphasized, however, that many women normally experience two to five anovulatory cycles each year. Repeated consecutive biopsies, therefore, at the onset of bleeding are necessary to establish significant existence of corpus luteum failure.

The determination of the urinary excretion of pregnandiol (an excretory product of corpus luteum metabolism) as quantified on daily twenty-four hour specimens of urine during the fourteen days immediately prior to the onset of bleeding, adds complementary data to that secured by endometrial biopsy. Significant departures from the normal level of 45 to 55 mg. per cycle may indicate diverse grades of corpus luteum failure. That this procedure of hormonal titration does not afford routine clinical application is apparent in view of its time-consuming, technical and costly propensities and because of the many variables which render difficult the interpretation of results.

The diagnosis of estrogenic failure considers these objective criteria: (1) non-occurrence or incomplete development of sexual maturation or secondary regressions in sexual organs; (2) abnormal anthropometric measurements resulting from the non-union of the epiphyses in the adolescent form of hypovarianism; (3) peculiarities of body habitus, ascribable chiefly to abnormalities in fat deposition; (4) altered epithelial responses, denoted chiefly by

atrophic or regressive changes of the vaginal epithelium as determined by smears or biopsies, or persistent estrogenic or atrophic characteristics of the endometrium as revealed by biopsy; and (5) decreased urinary titers of estrogens, the onerous nature of hormonal titrations in general having been stressed with respect to pregnandiol determinations.

Alterations in the cyclicity and character of uterine bleeding cannot be accepted necessarily to indicate ovarian failure. Minor irregularities of uterine bleeding may occur without significant impairment of fertility. Amenorrhea persisting for several months, pregnancy having been excluded, may indicate significant ovarian failure.

CAUSE OF OVARIAN FAILURE

Segregation of the various etiologic factors contributing to ovarian failure permits differentiation into two general groups: (1) extra-endocrine and (2) endocrine causes. The determination of the diverse causes indicates the therapeutic approach.

Extra-Endocrine Causes embrace: acute and chronic debilitating diseases; inanition and vitamin deficiencies; various emotional and psychic disturbances; environmental changes, with particular respect to altitude and climate. The alterations in ovarian function are most likely attributable to indirect effects on the pituitary-ovarian axis mediated via the pituitary gland.

Endocrine Causes may be reviewed briefly:

(1) *Intrinsic Ovarian Failure*: The ovaries are refractive to pituitary stimulation or incapable of yielding a physiologic response due to (a) developmental inadequacy; (b) incomplete puerperal recovery; (c) local pelvic disease; (d) premature senescence; (e) physiologic immaturity or senility; (f) damage from roentgen-ray or radium or (g) removal by surgery.

Inasmuch as the pituitary function remains at a normal or somewhat increased level, gonadotropic therapy (gonadal activation or stimulation) is irrational. Time and local gynecologic measures may permit the recovery or development of ovarian receptivity. Failing in spontaneous recovery of ovarian responsiveness, substitutional therapy at the ovarian level is the only effective treatment; this form of therapy will not circumvent the sterility of the patient.

(2) *Ovarian Failure Due to Hypofunction of the Pituitary*: Pituitary deficiency due to diverse causes,

such as tumors, invasions, intrinsic inadequacy and alterations of pituitary function secondary to peripheral influences (extra-endocrine factors) does not permit adequate gonadotropic activation for normal ovarian responsiveness. The therapeutic employment of equine gonadotropins and chorionic gonadotropins is rational.

(3) *Ovarian Failure Due to Pituitary Disturbances resulting from Thyroid or Adrenal Disease:* Varying alterations of pituitary function induced by fluctuations in thyroid function, either in the form of hyperthyroidism or hypothyroidism, may adversely affect ovarian activation and responsiveness. The indicated medical, surgical or roentgenologic therapy of the thyroid disturbance represents the rational therapeutic approach for this form of ovarian failure.

Adrenogenitalism, resulting either from tumors or hyperplasia of the adrenal cortex, may impair ovarian function by a two-fold mechanism: (1) indirect alterations of the pituitary-gonadal axis mediated via the pituitary; or (2) peripheral estrogenic-negating responses induced by the excessive androgenic substances. Adequate surgical therapy of the adrenogenitalism constitutes rational treatment and may permit the return of ovarian function.

(4) *Ovarian Failure Due to Diabetes Mellitus:* Ovarian failure in diabetes mellitus is attributed usually to alterations of the pituitary-gonadal axis induced by the accompanying cachexia and metabolic disturbances. Standardization of the diabetic state by adequate insulin and controlled diet usually corrects the ovarian failure. Persistence of the ovarian failure in a well-controlled diabetic may be explained on alterations in the ovarian vascular supply due to arteriosclerosis.

(5) *Ovarian Failure Due to Altered Metabolism Resulting from Thyroid or Adrenal Diseases:* Alterations in metabolism of the ovaries secondary to disturbed oxygen metabolism ascribable to thyroid deficiency or to faulty electrolyte, water and glucose metabolism indicative of cortical adrenal failure, are expressed by endocrine failure of the ovaries or germinal failure, characterized by the discharge of blighted or imperfectly formed ova. Adequate thyroid therapy usually assures the return of ovarian function in hypothyroid states. The efficacy of cortical adrenal extract or desoxycorticosterone acetate in the therapy of ovarian failure secondary to Addison's disease has not been established.

(6) *Ovarian Failure Due to Gametopathic Fac-*

tors: Both the non-endocrine factors and the endocrine alterations described in types 1-5 may result in the formation of ova incapable of fertilization or of normal embryonal development. The therapy of this gametopathic condition is indicated by the cause.

(7) *Ovarian Failure Due to Endometriopathic Factors:* Inasmuch as the endometrium is concerned with adequate metabolism, utilization and excretion of ovarian hormones, alterations in endometrial function may effect pronounced disturbances in ovarian function. Such disturbances in pituitary-ovario-endometrial reciprocities may be mediated by depression of the gonadotropic principles of the pituitary or by faulty ovarian sterol metabolism. Therapy either by curettage or cyclic estrogen-progesterone therapy is designed to re-establish ovario-endometrial relationships by the production of ample endometrial response capable of effecting adequate metabolism of ovarian principles. Considerable irreparable destruction of the endometrium by tumors or fibrosis does not permit therapeutic salvage of ovarian function.

TREATMENT OF OVARIAN FAILURE

Thorough diagnostic exploration for the diverse etiologic factors producing ovarian failure often delineates the therapeutic approach. Correction of the extra-endocrine factors, as removal of foci of infection, stabilization of the general body metabolism, i. e., reduction of obesity or ample caloric intake for leanness, medical therapeutics of acute and chronic debilitating states, correction of anemic levels, constitutes rational and effective therapy of ovarian failure.

There are three general indications for the endocrine therapy of ovarian failure *per se*: (1) completion of sexual development and maturation in adolescent failure either for the correction secondarily of cosmetic inelegance or for circumvention of anticipated sterility; (2) therapy of undesired sterility in adult ovarian failure; and (3) treatment of diverse irregularities of uterine bleeding, particularly menometrorrhagia, in which the correction of the hemorrhagic tendencies is governed by desire to circumvent existing sterility. In that connection, fractional doses of intra-uterine radium is efficacious therapy for menometrorrhagia in the adult in whom existing sterility is not undesired and in whom careful gynecologic studies establish the ovarian failure to be due to endocrine disturbances.

Adolescent Ovarian Failure—characterized by anthropometric discrepancies suggestive of non-union of the epiphyses with resultant overgrowth of the long bones, retarded or incomplete development of the sexual organs and delayed menarche—is due chiefly to four causes: (1) inanition from dietetic faults or cachexia from acute or chronic diseases; (2) childhood and pre-adolescent hypothyroidism; (3) intrinsic ovarian inadequacy; and (4) childhood and pre-adolescent hypopituitarism. The diagnosis and treatment of the first two classes is relatively satisfactory. Differentiation of the last two groups, i. e., those instances of ovarian failure due to intrinsic ovarian refractivity or those due to inadequate gonadotropic stimulation from the pituitary, is somewhat more difficult, inasmuch as adequate clinical tests for evaluation of pituitary function are lacking. Occasionally, presumptive differentiation is permitted by the endocrine survey; retardation of general somatic growth is suggestive of pituitary deficiency, whereas overgrowth of the long bones noted by increased measurements of the span over the height and the lower measurement (from the symphysis pubis to the soles of the feet) over the upper measurement (from the symphysis pubis to the head) implies no deficiency in growth hormone (pituitary), but does indicate delayed epiphyseal closure due to hypo-ovarianism.

In the absence of clinical findings which will permit differentiation of ovarian failure due to pituitary deficiency or to intrinsic ovarian-non-responsiveness, therapeutic trial with gonadotropic substances will effect the diagnosis. Those patients responding to stimulatory (gonadotropic) therapy may be considered to be deficient in pituitary activation, whereas those not responding to therapeutic employment of the gonadotropins may be assumed to have intrinsic ovarian refractivity. In that connection, it must be emphasized that only those instances of ovarian failure which respond to gonadotropic therapy may anticipate ultimate gametogenic salvage and that those patients demanding substitutional therapy at the ovarian level, while effecting recovery of the endocrine manifestations of the hypo-ovarian state, will not obtain salvage of the existing germinal failure.

The therapeutic regime for pituitary substances is as follows: Inasmuch as no potent commercial preparations of the anterior lobe of the pituitary have been prepared, the pituitary-like gonadotropin of the

pregnant mare serum* is employed. Prior to the initiation of therapy, the patient is skin tested for allergic responses. If negative, 400 to 800 I. U. of equine gonadotropin are administered intramuscularly every two days for a period of six weeks. Usually two such series of therapy are administered, an intervening rest period of six weeks being instituted between the series. The rest period prevents the development of refractory substances or antibodies to the pregnant mare gonadotropin. Positive evidence of favorable response is usually obtained with the first series of therapy if it is to be received. If no response is obtained to two series of gonadotropic therapy, it may be assumed that no pituitary deficiency exists and that intrinsic ovarian refractivity underlies the ovarian failure. Substitutional therapy with ovarian principles is then indicated.

During the course of gonadotropic therapy, certain objective data indicative of estrogenic stimulation should be observed at periodic intervals, preferably every week or ten days: bimanual examination (usually rectal) to determine the size of the ovaries, uterus and cervix; responsiveness of the vaginal epithelium as determined by vaginal smears; depth and diameter of the vagina as determined by sounding or pelvic examination; consistency and size of the breasts; and hormonal titrations for excreted urinary estrogens. Occasionally, cystic responses of the ovaries occur during therapy. Treatment should be discontinued until the cystic condition subsides and resumed later at lower dosage levels.

When positive responses to gonadotropic therapy are experienced, the therapeutic regime is continued, selective rest periods being advised to prevent antibody formation, until late adolescent growth of the sexual organs (vagina, uterus, tubes and ovaries) is obtained. Episodes of uterine bleeding may occur, permitting endometrial biopsies to be secured. If the endometrial response is progestational, complete ovarian salvage may be assumed and all therapy discontinued. Another biopsy is taken at the onset of bleeding in the following month in order to demonstrate the spontaneous character of the ovarian function. A similar procedure is advisable in instances in which the endometrial response is estrogenic in nature. In that connection, salvage of the ovarian sterility may be permitted by the system of 1-2

*Available commercial preparations are: gonadogen (Upjohn); anteron (Schering); and gonadin (Cutter).

gonadotropic therapy to be noted below. If the patient responds favorably to gonadotropic therapy, complete physiologic salvage of the adolescent hypoo-ovarianism may be obtained rapidly within six to twelve months.

In those instances of adolescent hypo-ovarianism wherein favorable response to stimulatory (gonadotropic) therapy is not obtained, substitutional therapy with ovarian principles is indicated. This form of therapy, while permitting satisfactory endocrine responsiveness, possesses several limitations: (1) Substitutional therapy cannot circumvent the existing sterility; germinal failure can only be corrected by stimulatory therapy. (2) Inasmuch as the beneficial effects of substitutional therapy are temporary, indefinite administration of the ovarian principles, estrogens and progesterone, is prohibited by the present expense of such a therapeutic regime. Clinical employment of the cheap and potent oral estrogens, as stilbestrol, is contingent upon ample proof that such preparations are free from diverse toxic or carcinogenic effects when administered for long periods of time. (3) Upon cessation of therapy, the genital growth induced by estrogenic substances tends to regress.

The indications for limited employment of substitutional therapy may be considered briefly: (1) Adequate estrogenic therapy may result in epiphyseal closure, thereby curbing excessive growth of the long bones and the resultant cosmetic inelegance characteristic of adolescent hypo-ovarianism. (2) Sufficient genital growth may be induced by estrogenic therapy to permit responsiveness to gonadotropic therapy. Further trials with gonadotropic therapy are advisable when genital development has resulted from estrogenic therapy in order that complete ovarian response may be obtained. (3) Limited therapeutic employment of the substitutional regime maintains the peace of mind of the patient by convincing her of the clinical ineffectiveness of the treatment. Doubtlessly, the cosmetic alterations attributable to hypo-ovarian states may be more satisfactorily treated by flattering brassieres, attention to styles and fitting of garments designed to compensate for the lack of feminine contour, than by prolonged, ineffectual estrogenic therapy.

The regime for substitutional therapy designed to produce sexual maturation is as follows: 1 to 2.5 mg.

(6,000 R.U. to 15,000 R.U.) of estradiol benzoate† or estradiol dipropionate‡ is administered intramuscularly every two or three days for an initial series of therapy limited chiefly by genital response, expense and the doctor's enthusiasm. Evidence of possible renal damage is checked by periodic urinalysis. As satisfactory sexual maturation is induced, the dosage may be lowered gradually and, if bleeding ensues, given in accordance to a cyclic pattern simulating the normal menstrual cycle. In that connection, the regime of cyclic estrogen-progesterone therapy to be described below is satisfactory.

Therapy of hypomastia *per se* may be limited chiefly to the local application of an estrogenic ointment containing 0.5 mg. estradiol benzoate (3,000 R.U.) to 4 grams (one drachm) of ointment, the base being lanolin-petrolatum. Four grams (one drachm) of ointment is massaged thoroughly into the mammary area each evening before retiring. Although the estrogenic effects primarily are local in character, some general effects may occur.

Adult ovarian failure occurring during the reproductive period may be attributed generally to five general factors: (1) inanition from inadequate diet or cachexia resulting from acute and chronic debilitating diseases; (2) hypothyroidism; (3) intrinsic ovarian failure; (4) endometriopathic factors; and (5) pituitary deficiency. The diagnosis and treatment of the first two causes, i. e., the extra-endocrine factors and the hypothyroid state, is usually satisfactory.

Whereas the rational therapeutic approach to adolescent ovarian failure is initially with stimulatory (gonadotropic) therapy in order to test the intrinsic receptivity of the ovaries, the therapeutic approach to adult ovarian failure presumes the existence of endometriopathic inadequacy until proven otherwise. The same pertinent limitations of substitutional therapy noted in the adolescent form apply to the adult type of ovarian failure.

The cyclic employment of estrogen-progesterone therapy possesses value in the correction of certain endometriopathic factors, as well as the conservative control of functional menometrorrhagia in which preliminary hemostasis has been secured by intensive

†Available commercial preparations of estradiol benzoate include progynon-B (Schering) and ben-ovocylin (Ciba).

‡Estradiol dipropionate is obtained as di-ovocylin (Ciba) and progynon D.P. (Schering).

estrogenic therapy or curettage. The details of the cyclic estrogen-progesterone regime may be described briefly: at the conclusion of an episode of uterine bleeding, estradiol benzoate in doses of 0.3 mg. (2,000 R.U.) is given intramuscularly every two days for a period of ten days; immediately thereafter, estradiol benzoate 0.3 mg. (2,000 R.U.) and progesterone* in doses of 5 mg. are given simultaneously every other day for another ten days. All therapy is discontinued should an episode of uterine bleeding occur before the treatment regime has been terminated and is resumed in similar fashion following the bleeding episode. Usually two series of this type of therapy are administered, though the endometrial response as determined by biopsy governs the indications, i. e., all therapy is discontinued if a progestational response (indicative of complete endometrial salvage) is obtained and the endometrium sampled at the onset of the next episode of bleeding to determine the spontaneous abilities of the ovario-endometrial system. If indicated by the persistence of estrogenic endometria, additional therapy of the following order is given: Estradiol benzoate in doses of 0.3 mg. (2,000 R.U.) and 5 mg. of progesterone (the progesterone component may be unnecessary) are administered simultaneously every other day in the last half of the cycle starting on the fourteenth day and continuing for ten days, therapy being discontinued if bleeding occurs. Several series of low dosage sterol therapy of this fashion are administered until a progestational response of the endometrium is secured.

In instances wherein continued estrogenic responses are noted by repeated consecutive endometrial biopsies, pituitary deficiency may be suspected. This is treated by a system of cyclic one-two gonadotropic therapy which may be described briefly: Equine gonadotropin (the precautions concerning allergic responses to equine gonadotropic therapy and clinical observations to be made periodically have been delineated) in daily doses of 400 to 800 I.U. is administered intramuscularly for ten days, therapy beginning at the cessation of an episode of bleeding. Immediately thereafter, chorionic gonadotropin† in daily doses of 500 to 1,000 I.U. is administered for

ten more days, therapy being discontinued if an episode of bleeding occurs.

At the onset of bleeding, the endometrium is sampled by biopsy to determine the responsiveness to therapy. If a progestational endometrium is obtained, normal ovarian response is indicated. If the ovaries are receptive, the first series of therapy usually induces a progestational response. Therapy is discontinued for the following month to permit the ovaries to demonstrate their spontaneous recovery, and the endometrium is sampled by biopsy again at the onset of the next episode of bleeding. A positive response permits the assumption that complete ovarian salvage has resulted.

In those instances wherein positive responses are obtained to cyclic one-two gonadotropic therapy but not on discontinuation of therapy, the ovarian sterility is treated actively as described above and efforts are instituted to secure a pregnancy. Due to intercurrent ovarian failure, such pregnancies are apt to abort; hence, active substitutional therapy with estrogens and progesterone is initiated as soon as the pregnancy is diagnosed and continued throughout its course.

If patients do not respond favorably to two series of cyclic one-two gonadotropic therapy, it may be assumed that no pituitary deficiency that may account for the ovarian failure exists.

It is apparent that therapeutic testing in the manner described above permits the differential diagnosis of ovarian failure due to intrinsic ovarian inadequacy, endometriopathic factors and pituitary deficiency. Favorable responsiveness to cyclic estrogen-progesterone therapy indicates the existence of endometrial inadequacy, whereas positive responses induced by cyclic one-two gonadotropic therapy direct attention to pituitary deficiency as the cause of the ovarian failure. No response to either form of therapy indicates intrinsic ovarian failure.

Ovarian failure of the climacteric results from intrinsic senility of the ovary; no pituitary deficiency exists. Inasmuch as the ovaries are intrinsically refractive, no recovery of the ovarian sterility can be anticipated. The therapeutic regime for the climacteric should be designed to permit symptomatic clinical transition and readjustment throughout this period with no expectations of adequate therapy of the ovarian failure *per se*. In that connection, intensive estrogenic therapy is not needed by the ma-

*Available commercial preparations of progesterone include: proluton (Schering), progestin (Lilly) and luto-cylin (Ciba).

†Available commercial preparations of chorionic gonadotropin include APL (Ayerst, McKenna & Harrison), antuitrin-S (Parke-Davis & Co.) and follutein (Squibb).

jority of women; indeed, prolonged employment of estrogens may produce dire complications, as marked psychiatric disturbances, uterine hemorrhage, dermatitis and generalized edema. More rational therapeutic measures include modification of the tempo of living, sedation and the reassurance permitted by a thorough medical and gynecologic investigation. Small doses of oral estrogens employed for a short time may supplement the therapeutic regime with beneficial results without altering the sexual regression or the endocrine readjustments characteristic of this period.

One dictum relative to ovarian failure is pertinent: Every instance of genital hemorrhage (intermenstrual spotting, menorrhagia, metrorrhagia) of a woman of climacteric age should be investigated by diagnostic curettage for the presence of possible malignancy before endocrine therapy is considered.

SUMMARY

(1) Rational therapy of ovarian failure is determined by the diagnosis of the degree and nature of the ovarian failure and the segregation of the etiologic factors contributing to the failure.

(2) The symptomatology and the criteria for the diagnosis of diverse grades of ovarian failure have been discussed.

(3) Various causes of ovarian failure have been classified and the mechanism of their impairment of ovarian function has been discussed.

(4) The ultimate aim of the therapy of ovarian failure is the initiation or restoration of fertile cycles, i. e., circumvention of existing sterility.

(5) The cause of the ovarian failure conditions the prognosis relative to physiologic salvage and defines the therapeutic approach.

(6) The limitations and the procedures of various therapeutic measures available at present for the treatment of ovarian failure have been considered.

(7) Diagnostic exploration with testing of ovarian responsiveness to gonadotropic therapy or endometrial responsiveness to cyclic estrogen-progesterone therapy permits differentiation of ovarian failure ascribable to intrinsic refractivity of the ovaries and conditions the therapy. The procedures and the interpretation of these therapeutic tests have been presented.

(8) Critically selected therapeutic measures as determined by the diagnosis of the exciting causes of ovarian failure are capable of restoring normal physiologic ovarian responses in many women with ovarian failure.

THE ASSAY OF URINARY GONADOTROPIN IN CASES OF TESTICULAR TUMOR.*

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It is now generally accepted that the assay of urinary gonadotropin plays an important part in the diagnosis and treatment of certain testicular tumors. However, apparently it is still impossible to state which of the malignant types of testicular tumors produce this hormone. This is further complicated by the fact that various pathologists use different types of classification. Consequently, for the purpose of urinary assay, one may cut the Gordian knot by means of a physiologic classification, i. e., there are two types of malignant tumor of the testes: those which produce gonadotropin and those which do not. For purposes of diagnosis, therefore, a posi-

tive test for this hormone denotes the presence of a malignant growth; a negative test means nothing. For that reason, I consider it highly advisable to routinely determine the hormone content of a twenty-four hour specimen of urine in a case of suspected malignancy, *before* operation or irradiation. If this is not done, we will not know whether this was a hormone producing tumor or not. Consequently, if later the presence of metastases is suspected, several tests may have to be made before we can conclude either that no metastases have occurred, or that—should they become clinically apparent—it must be a non-hormone producing growth.

*Delivered before the American Association for the Study of Neoplastic Diseases, Washington, D. C., September 6, 1940.

Other writers have probably stressed sufficiently the fact that the rabbit ovulation test should not be

used in this condition, because the hormone concentration is often too weak to produce positive results. In one patient, rabbit tests on first morning specimens of urine were occasionally positive but often negative.¹ It is necessary, therefore, to use a quantitative test, employing rats or mice.

Before passing on to the technic of this test, I wish briefly to review some facts concerning this hormone, *gonadotropin*, which is now the official term for what was formerly called *prolan*. Moreover, instead of speaking of *prolan A and B*, we now use the terms *Follicle Stimulating Factor and Luteinizing Factor*. The gonadotropic hormone may consist of varying mixtures of these two factors, or of either one alone.

Gonadotropin is formed by two types of tissue: the anterior pituitary (when it is called *pituitary gonadotropin*), and by chorionic and related tissues (*chorionic gonadotropin*).

We find gonadotropin in the urine in various conditions. It is of *pituitary* origin (1) in castrated males and females, whether by surgical or natural means (menopause), and (2) for a few days about the mid-point between menses, when it is thought to denote ovulation.

It is of *chorionic* origin in (1) females with pregnancy, hydatidiform mole, and chorionic epithelioma, and (2) in males with certain types of malignant testicular tumors, especially those containing chorionic tissue. However, some investigators believe that certain types of tumors, as seminomas, do not themselves produce this hormone, but rather cause the excretion of pituitary gonadotropin, perhaps merely by destroying testicular tissue and producing a hemicastrate.

It is easy to understand why a castrated male or female should excrete pituitary gonadotropin in the urine, for, because of the absence of the inhibiting androgenic or estrogenic hormones, the anterior pituitary becomes over-active. Administration of a sex hormone will promptly diminish or prevent this excretion. However, usually a hemi-castrated male also secretes small amounts of this hormone—why, it is impossible to explain. Occasionally, perhaps, we may suspect that previous irradiation may have damaged the remaining testis. Ordinarily this cannot be the case. We can only presume that the remaining testis is unable to hypertrophy sufficiently to completely replace the lost tissue. Whether this is also true of a female, I do not know.

Now I wish to review the general technic of this test as used both as an aid to the clinical diagnosis of a malignant hormone-producing tumor, and to detect early metastases following treatment.

In my opinion, an entire twenty-four hour specimen of urine should be obtained. This enables one to report the number of rodent units per twenty-four hours, as well as the number per liter. In this way, marked variations in hormone concentration due to varying intake of fluid may be avoided. Since this urine is to be concentrated in any case, there is no need to use the first morning specimen of urine as with the rabbit ovulation test for pregnancy.

The hormone should be concentrated before injection. Some investigators use instead the unconcentrated first morning specimen of urine but—due to the limited amount of urine which can be injected—there will need to be at least 100 rat units per liter to produce a positive test. Since some tumors may produce less than this amount, especially in early metastases, I believe it advisable to test for lower concentrations even though this greatly increases the labor required.

The alcoholic concentration method has proven simple and satisfactory. One of its chief objections—the production of a toxic concentrate due to precipitated K salts²—can be obviated by a three to five hour dialysis through cellophane tubing. However, when concentrating the urine only twenty times, and injecting only twice a day, it is rare that a rat dies. The exact technic of concentration is similar to that of Frank,³ 600 cc. of urine being used, and brought to the correct pH with universal indicator paper. The dry precipitate is taken up in 30 cc. of H₂O—a concentration of twenty times. Immature female rats are far preferable to mice for this particular technic, due to their larger size, since the ovaries and uterus are weighed, and a vaginal smear is made. It is of definite advantage to have one's own colony, since one may be sure that the rats are of the same age (twenty-one days), and of the same size.

The method of Heller⁴ in giving nine injections over a period of five days probably intensifies the effect of a given amount of hormone, and, likewise, it is definitely less toxic.^{5, 6} Therefore, I consider this method preferable to the common technic of three daily doses for two days.

Finally, one must choose an end point for this test. With the usual methods employed, one must merely estimate it, either from the gross appearance of the

enlarged ovaries and uterus, or by histologic examination of the ovaries, the latter requiring extra labor. I prefer to allow a balance to do the estimating for me, and consequently weigh the ovaries and empty uterus. If gonadotropin is present, it increases the ovarian weight, and, due to the consequent secretion of estrogen, the uterine weight also increases tremendously. Therefore, a definite increase of ovarian and especially of uterine weights denotes the presence of this hormone, without the necessity of estimating an end point, and one can readily determine by comparison of a series of tests on a patient, whether the hormone is increasing or decreasing in amount.

However, it is of some advantage to be able to report the number of rat units (R. U.) per liter and per twenty-four hours to the clinician. For this purpose, the postive vaginal smear is an excellent end point to denote one rat unit. The smear should consist of cornified non-nucleated cells, entirely without leucocytes or mucus. The least amount of urine producing this effect is considered to contain one rat unit of gonadotropin.

It is true that if the gonadotropic hormone produced contains varying quantities of the luteinizing factor, the ovarian and uterine weights may not be quantitatively affected, but in the same patient, this should not affect a conclusion as to whether the hormone concentration is increasing or decreasing.

Since it is claimed that certain types of tumors may produce more luteinizing factor than others,⁷ it may be of some future advantage to record the presence of corpora hemorrhagica and lutea.

When running the first pre-operative test on a patient with suspected malignant tumor, I believe it advisable to test for the hormone over a fairly wide range of concentrations. Consequently, the following series of injections are made, using six rats:

	FIRST TEST					
	A			B		
	CONCENTRATE (20 TIMES)			UNCONCENTRATED URINE		
	Rat 1	Rat 2	Rat 3	Rat 4	Rat 5	Rat 6
cc./inj. -----	1.0	0.5	0.1	1.0	0.5	0.1
Total amount						
in 9 injections--	9.0	4.5	0.9	9.0	4.5	0.9
Equiv. amount						
fresh urine						
(cc.) -----	180.0	90.0	18.0	--	--	--
No. R.U./lt.---	5.5	11.	55.	111.	555.	1111.

Thus the urine is tested for concentrations varying between 5.5 R.U./lt. and 1111 R.U./lt. Should the

hormone titer be above this highest figure, this fact will usually be of more interest than of clinical value, since there is then no doubt of a hormone producing tumor being present.

Should the patient's hormone excretion fall between 5.5 and 55 R.U./lt., indicating a tumor of poor hormone producing properties, or of small size, then the second test, usually following operation or irradiation, may be aimed at that particular concentration in smaller graduated doses, to determine more accurately the exact amount present, as indicated below.

	SECOND TEST					UNCONC.
	CONCENTRATE (20 TIMES)					URINE
	Rat 1	Rat 2	Rat 3	Rat 4	Rat 5	Rat 6
cc./inj. -----	1.0	0.75	0.5	0.25	0.1	1.0
Total amount						
in 9 inj. ----	9.0	6.75	4.5	2.25	0.9	9.0
Equiv. amount						
fresh urine	180.0	135.0	90.0	45.0	18.0	--
No. R.U./lt.---	5.5	7.	11.	22.	55.	111.

Below is tabulated the typical results of a test, in the form as reported to the clinician. This was a patient who had been hemi-castrated many years previously.

	CONCENTRATE (20 TIMES)				URINE	
Total dose --	9 cc.	4.5 cc.	0.9 cc.	9 cc.	4.5 cc.	0.9 cc.
Wt. in mg.						
—ovaries --	40	34	18	15	16	13
—uterus --	106	70	30	19	25	23
Vagina -----	open	open	open	closed	closed	closed
Vag. smear --	+	+	±	0	0	0
Corp. hem.						
or lut. -----	0	0	0	0	0	0
24 hour specimen =	1,760 cc.					

The first positive vaginal smear appeared with a total of 4.5 cc. of concentrate, equivalent to 90 cc. urine, = 11 R.U./lt. This amount is quite compatible with the fact that the patient is a hemi-castrate. The advantage of using this number of graduated doses is that we are able to rule out any abnormal reaction of one rat, and to minimize the importance of one dying.

If what I have said has given you the impression that this is a complicated test requiring the services of an expert, then my poor presentation is to blame, for once a technician has run this test, she has no difficulty with it thereafter.

SUMMARY

Brief mention is made of those conditions in which urinary gonadotropin is found. Some recommenda-

tions are made concerning the technic of assaying this hormone in cases of testicular hormone-producing tumors.

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IGNORANCE AND MEDICINE.*

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This might seem no time, at the beginning of what appears to us the world's greatest social and military revolution, to recite the follies of medicine. Medicine's mistakes are the mistakes of mankind. Because certain men have turned their ambitions to the relief of suffering and the prolongation of life does not necessarily inflict on them the responsibilities for all the obverse activities of man and his natural enemies—chiefly himself and his fellows. A physician is by choice of profession an observer, a dispassionate witness who should seek and humbly profess to seek a remedy for what he finds awry. There is no accurate philosophic conscience that makes him responsible for developments over which he has had no control. It is not his error that man is an inadvertent survivor of his own mistakes or that "he is an animal that likes to take physick".¹ What we have to say pertains not so much to the medical profession as to medicine as a general humanitarian attitude towards the ills of mankind.

Inscribed over a gateway² familiar to many of you are the lines:

Through wisdom is an house builded; and by understanding is it established: and by knowledge shall the chambers be filled with all precious and pleasant riches.³

This proverbial metaphor does more than attest the majesty of Reason or to suggest industry to seekers after higher learning. It teaches us that to define Wisdom is not a simple undertaking. The philosophical anatomy of Ignorance is no less elaborate.

Ignorance is commonly understood to mean lack of general or particular knowledge. Furthermore, in a profession, it may denote a lack of information that by ordinary standards ought to have been ac-

quired. Here the term ignorance takes on the unpleasant sense of a sin of omission, almost an allegation of negligence. Yet this is not the worst. For ignorance can be and usually is extended to a sin of commission—false knowledge or pedantry. It is therefore not so much a lack of knowledge⁴ as "knowing so many things that ain't so". There are, in effect, two things, to know and to believe one knows; to know is science; to believe one knows is ignorance.⁵

It has been said that "the basis of medicine is the instinct of preservation". Preservation relies on the maternal instinct, the acquisition of food and shelter, hygiene, and sympathetic social behavior. The survival of every species of plant and animal has depended upon an instinctive knowledge that is essentially scientific in that it has adjusted the individual to his peculiar environment. From heliotropism in plants to the choice of diet practiced by protozoa the law seldom varies. Man is the only survivor who has just discovered his vitamins. He is the only animal who has developed so complex a social system that his diseases have been preserved and multiplied. It would seem that many of his instinctive biologic adjustments have been neglected or forgotten. The causes of this situation no doubt lie in his preoccupation with thought. It has been suggested that Reason was the apple that threw him out of the Garden of Eden. Without it, man might still be a happy ape, "chattering in a paradise of bananas".⁶ With it he still chatters on in a purgatory of ignorance:

Place on this isthmus of a middle state,
A being darkly wise and rudely great:
With too much knowledge for the sceptic's side,
With too much weakness for the stoic's pride,
He hangs between; in doubt to act, or rest;
In doubt to deem himself a god, or beast;
In doubt his mind or body to prefer;
Born but to die, and reasoning but to err⁷.

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A more recent philosopher sums up man's disposition as follows: "Though he is the one creature who can significantly alter himself in his environment to suit his private tastes, he is the only one who is obviously maladjusted with himself and his environment. He is the one creature who might possibly obtain the necessities of life without robbing and killing his fellows, yet he is the most selfishly acquisitive and the most ruthlessly murderous of all. He is the one creature who is able to know much about himself and the world, and the only one who is habitually deluded. He is the one creature who can laugh, and the only one who is persistently unhappy. He is the one creature who can dodge many cruel and dangerous exactions of Nature, only to run foul of more cruel and dangerous devices of his own manufacture."⁶

Man is an ignorant animal. He is in a way the most ignorant animal of all; first, because he is capable of knowing so many things that he does not know, and, again, because he has developed extraordinarily this ability to know things that are not so, or at least unproven. It is not characteristic of man that he can put two and two together, but he does it so easily that the expression has become an idiom. What is not idiomatic is the humble truth that when he does put two and two together he gets three or five or some other number, as often as he gets four. He may be only faintly aware of it but he usually gets what he wants to get, or rather believes what he wants to believe. He does this because he is conditioned to wishful thinking. Like Pavlov's conditioned dogs, when the gods or the devil or Fate throw up an unwished number he keeps right on calling it four just the same—or he gets hysteria.

Man, and perhaps some higher animals, acquire a certain amount of conscious knowledge by this old quasi-rational method of trial and error. It is a tedious way and often a treacherous one, for Nature and her passionate creatures change the rules without notice. Nevertheless it is the only method which most animals have and the only method that man has been willing to trust. He sometimes knows that it is a deductive experimental approach that makes no allowances for changes in the conditions of the experiment. At the moment of decision it seems the most urgent and practicable solution. It is not a simple coincidence that it is also the laziest.

The internal bodily functions of animals and most

of their outward behavior can be explained on the basis of habit—a phenomenon of inherited and acquired responses. Habit formation is an instinctive reaction to internal and external environment⁸. For various reasons it may or may not involve consciousness. Nevertheless, it is accomplished through memory and therefore represents a form of learning or knowledge. Memory has been shown to be a function of all living cells and to be the principle upon which biologic adaption and organic evolution depend⁹. There is thus a "wisdom" of the body that is unconscious but none the less wise and necessary to life. Since we do not have to work hard to get it, we are apt to take it for granted, which is perhaps just as well. There are troubles enough in our conscious mind to keep us busy.

In studying the psychology of early man, we fortunately have a research laboratory on all sides. We have only to walk and talk among our contemporary neighbors to find examples of thinking as primitive as ever. We find that our sum-total of information has increased tediously but enormously, although our individual method of acquiring it and our capacity for thinking about it remain essentially unchanged. There is one honest disciple¹⁰ of Plato who thinks we are possibly "slipping". In spite of the discovery of abstract thought, a wonderful new tool for the acquisition of knowledge, our efforts to put it to practical use have been restricted and confusing. Abstract thought is apparently peculiar to man. Its method of producing knowledge is through speculation by means of mathematical logic. It produces ignorance equally well through speculation by means of fallacious logic. It has been to man's everlasting error and disgrace that he has combined past experience, present experiment, and abstract thought so obtusely as to produce ignorance more often than knowledge. Nowhere has the error been more costly than in medicine. Its history is a long story of superstition and bigotry.

II

One long panoramic glance at the tenuous history of the development of medical knowledge is enough to convince us that it is here that mankind's greatest intellectual frustration has existed. Nowhere has knowledge been so essential to his immediate and ultimate survival; to the ideal of total happiness. Nowhere has knowledge been so painstakingly gained and miscarried, false knowledge so tragically mis-

applied. It would seem that we have put off the study of ourselves until the last. In acquiring food, in building shelter, and in amusing ourselves with various devices—even in war—our mistakes have been the simple predictable errors of inexperience, progressively corrected according to practical notions of trial and error. Except as a conventional adjunct, man has never seriously relied on magic to kill a buffalo, build a bridge or a barn, or to defend himself against a mortal enemy. On the other hand, in the treatment of his mortal ills, he has strangely depended upon every conceivable kind of witchcraft. The least of these sorceries has not been his power of speech. It has allowed him the tragic amusement of thinking less about things themselves, than what others have said about them. The Tower of Babel was no idle expedient.

Man has by himself been unable to admit simple ignorance. His concerted efforts to cure himself have been marked by an awkwardness of approach that seems on short study to be amazing. It is not amazing when we analyze the historical conditions. Only in very recent times have the real means of acquiring medical knowledge been available. Accurate knowledge of medicine has been learned the hard way, the way of blind experience. Man's great faculty of reason, instead of being a help, has been more of a hindrance. This situation is due to the fact that abstract logic, so effective alone in mathematics, is useless in medicine. Medical science, unless controlled by biologic experiment is not mathematically quantitative and exact. The method of trial and error has to be added to logic, and *vice versa*, to produce reliable information about biologic phenomena. For a very definite reason this experimental method, so necessary and favorable to other arts and sciences, was denied to medicine. That reason had its origin in man's personal vanity. In the famous Greek allegory, Narcissus mirrors our race. "Self-love, the spring of motion, acts the soul."⁷

We do not know at just what period in man's history he fell in love with himself, but it was long ages ago. Perhaps the relative power and success of his primitive reason convinced him that he was some sort of a god. Perhaps he was. Indeed, his ability to use tools and weapons made him free and somewhat apart from other mortal creatures. At any event, the earliest graveyards contained implements which were hopefully supposed to serve him

in another world. Ever since, he has considered the earth only as his temporary habitation; he can go away but he can not really die. Death has been thought of as beyond and above Nature. Long ago its industrious apprentice, disease, became a supernatural and alien affliction. It became an evil visitation, independent of the body and affecting its function without affecting its real structure. The body remained pure and pious, unaffected by morbid sin. In such a concept, the study of anatomy, pathology, and physiology is more than unnecessary; it is blasphemous—the inquiry and the remedy should very properly be directed towards the outside disease and not towards the patient. Until the seat of disease was admitted to be the body, no intelligent effort could be made to study its nature. Only in their search for the whereabouts of the soul have men been so contentious and confused.

The association of medicine and religion is inevitable. To minds that can not or will not conceive of disease as a biologic necessity it is an easy step, almost a necessary step, to ascribe it to a god. To primitive man disease was an evil inflicted by angry spirits of the dead. It stalked him like a fateful shadow, to be run from, cajoled, prayed to, and finally denied. In the earliest civilizations separate deities such as Imhotep, the God of Abraham, and Aesculapius, presided over illness and conferred health or disease as a simple fiat or through the elaborate magic of their disciples, the priest physicians. Symbolic deities, such as the stars, sacred animals, and shrines, were developed in the ancient and modern practices of astrology, divination, sacrifice, and expiatory pilgrimages. The recent medieval crusades offer an interesting study in guilt reactions. There is often but a slight difference between intellectual catharsis and legerdemain.

Civilization is justly proud of its ancient, as well as its modern Greeks. Although they did not originate the science of abstract logic they were the first to perceive that its principles were applicable to the sociologic needs of mankind. In what Shakespeare would have called a great "throwing about of brains" we are proud and in fact somewhat astonished that medicine was not left out. It was not entirely the fault of Hippocrates and the Coan school that their scientific attitude failed to receive the necessary confirmation of practical experiment. Greek pantheology had become a relatively tolerant system in

that disease was permitted to inhabit the human body and materially affect it. The body had become recognized as such a battleground of contending humors that it often succumbed mortally. Nevertheless, as long as life persisted the body was the dwelling place of the soul, and philosophers could not at first or at last agree in what organ it resided. Whatever the location, the soul (and its seat) could not be diseased, for the soul was and still is, by definition,⁴ perfect and immortal within or without the body. Until the point was settled the whole body was inviolable from an experimental standpoint.

Hippocrates placed the soul in the liver. Plato, the idealist, on grounds so absurd that we must accuse him of facetiousness, placed it in the head (as being closest to Heaven). His humor was either discredited or ignored by Aristotle, who decided, on seemingly good experimental evidence, that the habitat of the soul was in the heart and that all intellect came under its hegemony. The next great realist in medicine, Galen, accorded with the combined experimental and religious philosophy of Aristotle. Their unquestioned dogmas fused and governed philosophic, religious, and medical doctrine for 1,500 years. From a philosophical standpoint, it was not until the "synthesis" of Saint Thomas Aquinas, in the thirteenth century, that human biology became theoretically separated from religion. The separation is still largely theoretical.

III

Although he might be the last to admit it now, man as an animal species is partly totalitarian. In this sense, his closest associates in the animal world are the insects. They achieve practical totalitarianism by two methods: the practice of preserving only the strong (and dumb), and an equally efficient device of producing so many individuals that the natural mortality is inconsequential. Man's totalitarianism is theoretical and religious in that the strong are preserved—but in another world. His chief concern for his brother is for the future of his brother's soul. Although he loves to believe otherwise, the altruism of his tribal and civilized life has been based on greed or self-preservation, in reality individualistic. If his concern had ever been the earthly destiny of the race, he would have paid more attention to genetics, to the survival of the fit, and to the problems of medicine. It has been said that, "By a strange combination of generosity and greed

he protects the weak in asylums and kills the strong in futile wars. . . . By a strange combination of ingenuity and impotence he multiplies the basic necessities of life far beyond any possible need, only to let millions go hungry and unclothed for lack of efficient distribution."⁶

To an outsider it would look as if we have been convinced of the futility of our own world. Perhaps our hypothetical defeat has been that we can envision another. At any rate our racial destiny has ever been in a Heaven,—some happy hunting ground. The pages of history are crowded with the activities of religious reformers, purveyors of a happy totalitarian life to come. The principle of life-after-death was discovered by precocious theologians ages before the dawn of history. The discovery of oxygen, the principle of life-on-earth, was made less than two centuries ago.¹¹ Its real importance has even been denied or ignored by the faithful as introducing a dubious or rival system of teleology.

This form of analysis seems severe, but it is the only reasoning that will explain man's obstinate denial of disease, his refusal to study it at its source. Civilization flourished for thousands of years before he would consider the problem. The Greek candle had no sooner been lit than he blew it out. Two thousand years later his reconsideration of the real nature of disease can be attributed to little more than fatigue, to the utter boredom of his reverberated dialectics—or to the natural curiosity of his simian inheritance.

If the incentive for the awakening in medical knowledge is still obscure, the history of its drama is not. The actors were strangely enough not practitioners of the Art. Leonardo, Palissy, Bacon, Descartes, and many others played primary rôles. The practical science of Newton, Gilbert, Kepler, and Galileo was supplemented by the satirical and provocative writings of Rabelais, Molière, Stern, Swift, Cervantes, and Voltaire. These and other intellectual leaders gradually forced a renaissance in medical thought. In this history we may read a lesson for today. *Verbum satis sapienti.*

The inertia of active ignorance is difficult to overcome, but common logic seems always ultimately superior to dogma. It is a law of physics, that for every action there is an equal and opposite reaction. So in medicine, for every magic there seems to be an equal and opposite counter-magic. Strangely enough, man's protective devices seem always to frustrate his

destructive impulses. For every widespread development of a gunpowder there has always been a Pasteur. For every man killed in war, another has been saved from disease. Unfortunately, from a phylogenetic standpoint, this principle is again the destruction of the strong and the preservation of the weak.

The heretical notions of Paracelsus and Vesalius, the popularization of human dissection in the Italian Universities, and Harvey's fundamental analysis of the experimental method had practically no effect on the general medical knowledge or the current medical practice of the renaissance period. Harvey himself continued to believe that the heart was the source of the body's innate heat and sense and that its action was cooled by the "bellows" of respiration. In his famous work, *De Motu Cordis*, he states thus: "There must needs be a place and beginning of heat by which the nursery of Nature, in the first beginnings of inbred fire may be contain'd and preserv'd; from whence heat and life may flow, as from their beginnings, into all parts; whither the aliment of it should come, and on which all nutrition and vegetation should depend. And that this place is the heart from whence is the beginning of life, I would have nobody to doubt."¹² For several centuries practicing physicians paid no real attention to his discovery that the blood circulates and knew nothing of the pertinent implications of his experimental method. Thomas Sydenham, the great Hippocratic physician of the seventeenth century had never heard of Harvey. Like his literary contemporary, John Donne, he was forgotten.

Seventeenth, eighteenth, and nineteenth century practitioners of medicine concerned themselves with the popular metaphysical doctrines of the day. In 1807, Thomas Jefferson, one of the greatest medical philosophers of all times, wrote these words: "I have lived myself to see the disciples of Hoffman, Boerhaave, Stahl, Cullen, Brown, succeed one another like the shifting figures of a magic lantern, & their fancies, like the dresses of the annual doll babies from Paris, becoming, for their novelty, the vogue of the day, and yielding to the next novelty their ephemeral favor. The patient treated on the fashionable theory sometimes gets well in spite of the medicine."¹³ Thus modern scientific medicine, as in the case of that Greek art which is still modern, had its foundations laid by scientists whose perspective was not circumscribed by too intimate a knowledge or

ignorance of the art of medicine. The eminent physicists, biologists, chemists, physiologists, and philosophers of the last three centuries developed the principles upon which our twentieth century science has been built. It was not until this century that the theory of medical practice became separated from Galenic empiricism and the misinterpretations of Aristotelian metaphysics.

IV

The dispassionate study of history ought to be a useful pursuit. It ought to satisfy our curiosity, sharpen our wits, and gain us a perspective for the interpretation of the present; perhaps even for a glimpse of the future. As Patrick Henry once said, in this City by the Falls of the James: "I have but one lamp by which my feet are guided, and that is the lamp of experience. I know of no way of judging the future but by the past."¹⁴ The lamps of medical experience have burned dimly in the past, but they burned a long time. We ought to avail ourselves of the knowledge of our past mistakes and there are enough of them in medical history to give us pause about any new thing. The newest thing we have in medicine is our ultra-scientific, possibly ultra-mechanistic attitude.

There is no real distinction between art and science. They are concepts that represent different phases of development in a subject, but not different subjects.¹⁵ It is art to do, science to understand. Medicine developed primarily as an art, through the dogmatic necessity of ignorance. It has continued on to become a science through the empiric necessity of knowledge in biology, chemistry, and physics. It has never served the people properly in either single capacity. Reality, so necessary to science, is apparently not applicable to the lives of many people. The way by which reality is softened to meet the capacity of individuals is in medicine called art. In the past, the art of medicine was partly vitiated by metaphysical attempts to help the body; attempts that were unsuccessful because they were based on no real knowledge of the subject. Now that science has shown us so much about ourselves, we seem to have reversed the process and become so pre-occupied with our physical structure, in disease and health, that we have neglected the art of administering to our person. The words of Plato still apply to us: "It is the great error of our day in the treatment of the human body, that physicians separate the soul from the body."¹⁶

Medicine has never seemed quite able to comprehend the whole individual. In primitive and historic medicine knowledge of the whole was so scanty that attention was centered on the spirit, particularly its future habitation, while the patient was amused and distracted, often to death, by various magical remedies purporting to allay supposed foreign humors in the body. At the present time knowledge of the physical body has become really so extensive and concise that we can give all of our time to it and never finish. Man can be measured and weighed, his cavities photographed and explored, his organs tested in every sort of way, even to the molecular oxygen that he burns. His juices can be stimulated, suppressed, and analyzed to the millionth part of a gram. There are machines which test the rhythmic emanations from his brain; which can measure the heat that is produced in his stomach by a disturbing thought. The three or four hundredths of a second's difference that indicate impediment to the timing of his heart can be registered graphically and proven in its subsequent disease. Yet we have little or nothing to tell us what man is thinking or how he will behave from minute to minute or from day to day. We can describe his behavior, but we have only rudimentary notions of the motives behind it or their general remedy. Although man's mental problems account for much of his illness and disability, our knowledge of them is so limited that we have generally neglected the subject. It is easier for us to apply our thoughts and our hands and our machines to tangible diseases that we know more about. In this we are following an ancient and ignorant prejudice.

Dr. E. A. Hooton has said recently: "Medical Science is primarily occupied with uncovering the needless actual biological sins man has committed against his organism by developing an artificial civilization."¹⁷ This statement is true, but obviously cannot be remedied as long as we go on making that civilization more and more artificial, our biologic sins more and more numerous. Recent years have perhaps shown some improvement in our general attitude and in our attempts to further the study of mental hygiene and abnormal behavior,¹⁸ but in the individual practice of medicine there seems hardly any time for the consideration of the mental problems that confront an individual and often make him sick. Like the physician to Lady Macbeth, when asked the question, "Canst thou not minister to a

mind diseased?"—we are still accustomed to reply, "Therein the patient must minister unto himself." It would seem that man's mental conflicts have had to develop physical reactions in the form of sublimations in order to gain attention. For an animal that has the gift of speech this is downright amazing. Can it be explained by our natural tendency to avoid and neglect what is difficult and therefore unpleasant? Is it possible that among so much science we may be about to lose art—to gain the whole material world and lose our appreciation of it? One expects that the answer is not so simple, but that it can be read from the pages of medical history. There is hardly any doubt that we are dealing with the same old problem of the soul. We no longer believe that it is located in the liver or the heart, or even in the brain. But the people generally believe that the soul has a habitation somewhere, possibly in the mind, and the functions of the mind are consequently linked with a supposed destiny of the spirit.

Difficulties that have attended the practice of psychoanalysis should be enough to teach us that the mechanisms of human behavior are fundamentally allied to religion. The consideration of this dichotomy of mind and spirit, of philosophy and religion occupied and directed medical thought for thousands of years. It would be a cause for alarm if we should find that man had suddenly thrown religion or formal philosophy out of the medical window. We should suspect him of so radical a flight into reality that his previous flights from reality would appear quite insignificant. The history of medicine teaches us that until some more practical combination of religion, medicine and philosophy is evolved abnormal thought and behavior will continue to be a major problem of man. This is a problem that has to do with the apathy of many individuals in response to their illnesses; with the widespread indifference to preventive medicine. It is a problem that has to do with the inevitable socialization of allopathic medicine, with eugenics and perhaps euthanasia. It has to do with the success of the medical cults that flourish like weeds both within and without our own professional garden. It is a problem in general public education, which we know is largely necessary to special professional education in medicine or in any vocation. The general practice of medicine still reflects and will continue to reflect the current knowledge of the people as a

whole rather than the advanced medical insight of a handful of scientific leaders.

Modern medicine is widely acclaimed, and justly so, for its advancement of special knowledge. However, to my mind, its most distinctive accomplishments have been made against ignorance, against the false knowledge that has permeated lay and medical thought for so many dark and damp ages. It is not what we have just learned to do so much as what we have just learned not to do. For the second time in history we have had the courage to say what we do and what we do not know; to admit with Hippocrates the value of natural forces in health and in disease. We have developed scientific techniques that are miraculous adjuncts in the detection and treatment of illness. Yet all these things will avail us little as individuals, or as a race, if we neglect our major problem. That problem is the general ignorance of man.

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HEMORRHAGE IN LABOR.*

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Hemorrhage, as a complication to labor, continues to be one of the major gateways to maternal death.

The Maternal Health Committee of the Medical Society of Virginia, working with the State Health Department, has undertaken to study the records of all maternal deaths occurring in the State of Virginia. This work was started December 1, 1939. There are 200 fatalities occurring in approximately 50,000 births, or about one death to 250 labors. Forty-nine thousand seven hundred and fifty did not die. This may explain to some extent the unwarranted confidence and complacency which has often characterized our approach to the treatment of an obstetric case. The 200 deaths so far studied show thirty-four due to hemorrhage. The whole committee has not yet jointly considered these and some may be finally attributed to other causes but the fact

remains that in thirty-four cases uncontrolled hemorrhage was an outstanding factor.

It is my purpose here to present certain facts and occurrences which, if duly considered, might cause any one who undertakes the care of an obstetric case to give respectful consideration to the dangers which may at any time beset him and his patient.

Probably in six of these thirty-four cases, death was unavoidable, but in sixteen cases the deaths could be attributed to errors with reasonable accuracy. Most had the disadvantage of no prenatal care and environment of the poorest kind. Often there was no planned labor. The public or its government must offer help to this class, both educational and material. This is being done in a large degree through the prenatal clinics, of which there are ninety-three in Virginia, under the supervision of the State Department of Health. Probably much

*Read by invitation before the Danville Academy of Medicine, January 14, 1941.

more help will be required than it is possible for any clinic to provide. Fortunately, however, steady improvement has been shown to follow efforts already made, but we cannot escape our obligations by pointing to other deficiencies.

The deaths from hemorrhage were distributed among the several types: post-partum, placenta previa, ablatio placenta, and hemorrhage following abortion, in the order mentioned,—the greatest number being due to post-partum hemorrhage. On the whole, the picture is so confused by the ignorance, poverty and lack of cooperation on the part of the victims and their families that evaluation of any one factor seems often very difficult. So far as the medical care is concerned, the failures are apparently due to errors which most of those who give any thought to this subject would agree upon. Pituitrin is still being used in the second stage of labor and has at least been a prominent factor in one or more of these deaths. The story in this case is that when apparently labor was progressing satisfactorily and the patient was believed to be near the end of the second stage, $\frac{1}{2}$ cc. pituitrin was given. A large baby was delivered almost immediately. Hemorrhage, shock and death followed in quick succession.

In one case, the doctor was called on account of slight vaginal bleeding which had stopped when he arrived. He was called later and found more hemorrhage. The vagina was packed with pledgets of unsterile cotton. She was then sent to a hospital where she was found to have a central placenta previa. On account of fear of infection from the packing, a section was not done but version and extraction was followed quickly by death. No preparation for blood transfusion had been made. The hospital treatment was, of course, debatable, but all will agree that if the doctor had sent the patient to the hospital without examination when first seen, her chances of recovery would have been much better. One patient, seven and a half months pregnant, presented evidence of ablatio placenta. I know that there is much difference of opinion among learned and skilful doctors on this subject. This doctor did what many others advise, ruptured the membranes. Labor did not start and after four days, the patient died undelivered from toxemia, hemorrhage and anuria. Three of the post-partum hemorrhage cases died with the placenta undelivered. One lived long enough to develop sepsis before death and at

autopsy portions of the placenta were found in the uterus. Hemorrhage following abortion accounted for three of these deaths. One was curetted after the fever started.

The Committee knows nothing as to the identity of the patient, doctor or even locality in which the death occurred. The information is obtained from the death certificates and from the records submitted by the attending physician, hospital, or any other information available. In some cases, the obtainable information is inadequate for an accurate evaluation but in many the facts are obvious. These records are obtained by representatives of the State Health Department who are themselves highly trained obstetricians and teachers. It is significant that the physicians interviewed for the most part have been most cooperative and anxious to help in reducing the maternal mortality. It is not unlikely that these contacts may have more results than any evaluation which the Committee can make.

The following is a brief abstract of a few of the records studied which tell their own story and illustrate repeated failures:

No. 85.—Placenta previa, post-partum hemorrhage. Bleeding began three weeks before labor. Treatment: calcium and glucose and rest in bed. Bleeding continued until labor. Rapid labor. Pituitrin and packing. Patient died twenty-three minutes after baby's delivery.

No. 1.—Placenta previa—section. Bleeding at seventh month. Seen by physician. Large hemorrhage six weeks later, and sent to hospital. Hemoglobin 55. Section without transfusion or preparation for it. Death followed.

No. 10.—Placenta previa, eighth month pregnancy. Patient sent to hospital because of vaginal bleeding prior to delivery. Pituitrin given. Delivery followed soon after, followed by bleeding and death. No preparation for treatment of hemorrhage.

No. 29.—Placenta previa. Pituitrin. Ruptured uterus. Bleeding before delivery. Pituitrin given before delivery. Ruptured uterus, shock. Death ten minutes after delivery.

No. 5-C.—Central placenta previa. Began to bleed at seventh month and at intervals until full term. First labor pains full term followed by profuse hemorrhage. Six hours later when little bleeding, physician made unsterile vaginal examination. Bleeding worse and patient sent to hospital where she was again examined before being prepared for

delivery. Profuse bleeding again. Blood transfusion and section. Uterus packed. Glucose solution in vein. Pulmonary edema and death.

No. 94.—Post-partum hemorrhage, patient six months' gestation, multipara, toxic. Bag inserted and expelled fourteen hours later. Following day larger bag inserted. Pituitrin. Three days later—fully dilated, membranes ruptured spontaneously. Breech extraction, head caught in cervix, hemorrhage followed. Tear of cervix (?).

No. 55.—Post-partum hemorrhage. Midwife could not deliver placenta; doctor was called and packed vagina. He could not then see the blood. Patient died soon afterward of hemorrhage.

No. 50.—Post-partum hemorrhage. Possibly placenta accreta. Cord pulled off. Manual removal of placenta attempted and failed. Several attempts. Patient died five weeks later of sepsis following hemorrhage.

It would seem helpful to formulate in one's mind the essential factors in the treatment of these various types of hemorrhage. The plans which I describe are those in general use and which I follow myself and believe to have certain advantages. Each individual may have some other which he has found to be most useful, but in any event it would seem better to have some well-defined plan in mind when the treatment of the case is approached. Of course, varying conditions may cause you to modify this, but that would not affect the usefulness of a planned program.

Placenta Previa.—This complication is not very frequent. Some estimate one in 200, while others give one in 1,500 as the incidence. The fact that it is not a frequent occurrence is possibly one of the reasons why its dangers are sometimes taken so lightly. It is said to be more common in multiparae, particularly the central type. The first hemorrhage is practically never fatal but is a warning, which, if recognized and acted upon, may save life. A painless, causeless hemorrhage in the latter months of pregnancy may safely be considered and treated as a placenta previa. No examination should be made until the patient has been admitted to a hospital, blood donor secured and preparation for treatment arranged. This examination should determine location of placenta. If the placenta is felt over the os, a Caesarean section gives better results. If not over the os, several procedures are available. If head is not engaged and there is no evidence of disproportion,

rupture of the membranes and tight binder may be useful, or a large bag may be inserted and weight used. When the bag is expelled the membranes may be ruptured and left to Nature or traction by Willett's forceps. If the cervix is fully dilated and baby is not large, version may be done, though the danger of rupture of the lower segment of the uterus is so great that extraction at this time gives a very high mortality. Several cases in this series resulted fatally when this plan was used. Of course, version may be done and the breech brought into the lower segment to control hemorrhage, and the case left for further dilatation after the method of Braxton-Hicks, as the baby is usually not living at this time. If head is engaged and cervix fully dilated, forceps may be used. As soon as a bleeding case is recognized, the blood should be obtained for transfusion. This was the fatal neglect in a number of these cases. The State law recently passed requires all hospitals which admit obstetrical patients to provide facilities for blood transfusion. It is hoped that soon blood plasma may be made generally available, as this eliminates the necessity for blood matching and can always be available.

Abruption Placenta.—This condition is usually but not always accompanied by pain. Rigidity of uterine wall and evidences of hemorrhage are significant and in some cases without visible bleeding. This is also usually associated with toxemia. Shock is usually evident. There is considerable difference of opinion as to the proper treatment. If the cervix is already open and labor is in progress, bag may be inserted and transfusion given, or in some cases rupture of membranes with tight binder may be sufficient. If cervix is long and hard and the hemorrhage progressing, I believe it is best to do a section, preferably under local anesthesia. Sufficient blood should be available to replace approximately the blood loss.

Post-Partum Hemorrhage.—It will be observed that about one-half of the hemorrhage deaths were due to post-partum hemorrhage. As previously stated, many of these women were obviously handicapped by no prenatal care, some being already anemic and some toxic also, so that it is difficult to criticise the treatment with accuracy, but one is impressed with the unsuccessful management of the third stage of labor. It would be unprofitable to spend all of the time finding fault with the treatment, but it would seem to be suitable that we consider some

of the methods by which the results of management of the third stage of labor might be improved upon.

Dr. R. L. Dickinson¹, 1899, called attention to a method of controlling hemorrhage by elevating the funds in the abdomen rather than shoving it down, yet, so far as I know, he did not apply this principle to the expression of the placenta. Brandt², 1933, described a method of expression of the placenta which was based on that principle. Apparently, Brandt's publication did not attract much attention. I had not seen Brandt's paper until about a year ago when I was preparing to publish a description of this method³ which I had used for several years. The method which I used is based on the same principle as Brandt's, though not exactly the same.

For a long time, I have been impressed with the disadvantages of the Crede method, as generally used and even taught in the textbooks. It consists of two principal motions; one is stimulation of contractions of the uterus, and the other is the expulsion of the placenta by "piston pressure". The first is not objectionable but the downward pressure does increase hemorrhage and may injure the uterine supports and tend to cause retention of the placenta. There can be no doubt that in a very large percentage of cases no noticeable harm comes from it, but in the fatal or severe post-partum cases it may play a large part. The plan of waiting for the placenta to separate while the perineum is repaired under general anesthesia often means the accumulation of a large hematoma back of the placenta as evidenced by the free gush of blood when the placenta is delivered. Numerous observers have shown that separation of the placenta is accomplished almost immediately after the delivery of the baby and probably by the same contraction which accompanies the delivery.

The method already described by Brandt and myself consists principally of placing the palmar surfaces of the fingers on the anterior surface of the fundus with the tips of the fingers near the junction of the lower thin cervical section with the body of the fundus. Gentle pressure upward carries the fundus upward. A clamp on the cord will be an indicator as to the position of the placenta. If the placenta has not been separated and is still in the fundus, the clamp will be carried up. When the fundus is carried up in most of the cases, the placenta will be in the relaxed cervix where gentle pressure with the tips of fingers below the fundus will cause the placenta to appear at the vulva. Many times the

placenta can be felt escaping from the cervix by the fingers at that point.

All the unfortunate results of the treatment of the third stage of labor are not represented by deaths. The excessive loss of blood is obviously detrimental to the health of the patient if not immediately replaced. The relation of blood loss to sepsis is well known. The amount of blood lost by the method described is remarkably little. Recently, ergotrate intravenously has been given as the shoulders are being delivered. Davis⁴ has reported 5,000 cases treated by this method with satisfactory results. I have used it in a small series of private cases this year, alternating with the use of pituitrin hypodermically after delivery of the placenta. The length of the third stage of labor is slightly decreased, four minutes and twenty-four seconds in 118 ergotrate cases compared with five minutes and twenty-five seconds in seventy-three cases in which pituitrin was given after delivery of placenta. The average blood loss (estimated) was 94 cc. in the ergotrate cases and the other group averaged 141 cc. The Brandt-Andrews method of expression of the placenta was used in both groups.

Only one case had as much as 600 cc. blood loss and this was in an ergotrate case. Another ergotrate case had 500 cc. blood loss. Two cases having pituitrin after delivery of placenta had as much as 500. Ergotrate intravenously is particularly useful in Caesarean sections. If given just as the shoulders are being delivered, the placenta is expelled spontaneously very promptly and with a minimum of hemorrhage. The number of manual extractions (five) in this group can be criticised and the percentage certainly is much higher than a longer observation would probably show. The ergotrate apparently does not appreciably affect that. Extreme care as to asepsis and antisepsis is taken before manually extracting a placenta. The field is freshly prepared, the vagina filled with tincture of merthiolate or zepharin and fresh gloves are used. All the extraction cases have had an afebrile puerperium. I believe it is much better to remove the placenta manually rather than allow the patient to bleed for a protracted time, even though the bleeding is only a continuous ooze.

The 200 cases reviewed occurred in approximately 50,000 births, an incidence of about one death in two hundred and fifty cases. This is a definite improvement over any previous year, but the fact that

so many women are delivered without fatality is itself a definite danger; a wholesome fear of disaster may be lost, when eternal vigilance is certainly the price of safety for obstetric patients.

CONCLUSIONS

Maternal mortality and morbidity from hemorrhage can be greatly reduced. The following recommendations are suggested by the material studied in this survey:

1. Prenatal care, including planned labor.
2. A more careful consideration and active treatment of bleeding in the latter months of pregnancy, including provision for blood transfusion.
3. Elimination of pituitrin before birth of the baby.
4. Elimination of the Crede method of expression of the placenta or at least the piston pressure part of it.

5. Manual removal of the placenta under surgically clean technique in the occasional retained case with bleeding.
6. Elimination of version and extraction when cervix is not fully dilated.

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Medical Arts Building.

CYSTIC LUNG DISEASE—

A Report of Two Cases With Autopsy Findings.

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In 1938 we reported the case of a young white male who had cystic lung disease, who, during the course of his illness, developed simultaneous bilateral spontaneous pneumothorax on two occasions, but subsequently died and was autopsied. Again, in 1938, we reported two other cases of cystic lung disease, one of whom died and was autopsied.

The purpose of this report is to present two additional cases of cystic lung disease, one occurring in an infant, and the other an elderly man. Both of these patients have died and autopsy studies have been made. In recent years there has been considerable interest in this condition and, although there have appeared numerous articles and case reports, relatively few autopsies have been reported.

CASE I.—This patient, a white male, sixty-seven years of age, was seen at the office July 23, 1940, complaining principally of shortness of breath. His family history was not significant and he had been in good health and had worked regularly as a carpenter. About a year previously he had first noticed

shortness of breath on exertion. During the past month it had been so severe that he could get around but very little. A few months ago he developed a productive cough and when seen this was quite troublesome, especially at night, and he expectorated a moderate amount of sputum. As the dyspnea progressed he fatigued easily. His appetite had recently failed him and he had lost weight. The physical examination revealed an elderly white male, well developed, but somewhat emaciated, weighing 117 pounds. Many teeth were missing and the remaining ones were decayed. The heart was displaced to the right, but otherwise seemed normal. The left lung was completely collapsed by pneumothorax and the right lung was emphysematous. Nothing else of significance was noted. Urinalysis showed a trace of albumin and an occasional hyaline and granular cast. Routine blood studies revealed nothing remarkable. The electrocardiogram showed low voltage and some slurring of the q r s complexes in lead one.

On fluoroscopic and x-ray examination of the

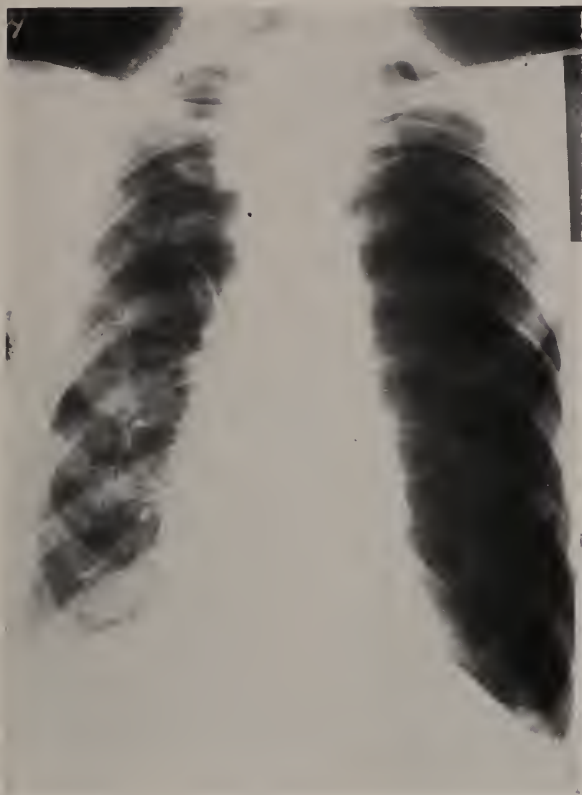


Figure 1. Case 1—Spontaneous pneumothorax with complete collapse of left lung. Large cyst in right lung.

chest the left lung was seen to be completely collapsed by pneumothorax. In the upper lobe of the right lung there was a large oval shadow of lessened

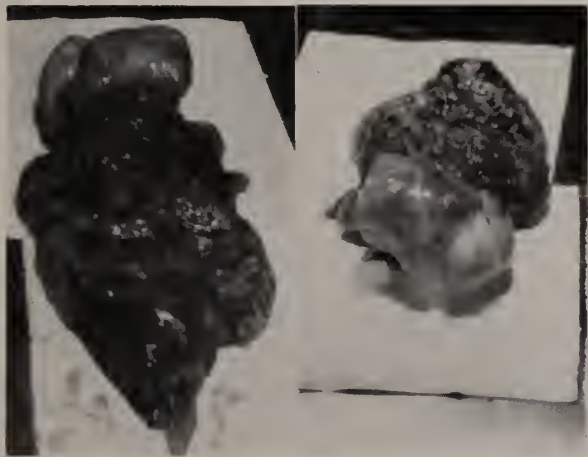


Figure 2. Case 1—Right lung at autopsy. Note large bladder-like cyst, and innumerable smaller cysts.

density which was thought to be a cyst. Other small areas throughout the lower part of the lung were suggestive of numerous small cysts.

The patient's dyspnea was obviously due in large part to the collapse of the left lung and an attempt was made to re-expand this lung. He was hospitalized and large quantities of air were removed one to three times daily for several days, but this failed to produce satisfactory expansion of the lung. Following the removal of three thousand cubic centimeters of air the lung would show considerable expansion, but within twelve hours would be completely collapsed again. A needle was fixed in the chest wall and connected to a water bottle to permit continuous aspiration of air. The patient pulled the needle out several times and this resulted in moderate subcutaneous emphysema. In the meantime the patient became increasingly more dyspneic. An intercostal catheter was inserted into the pleural cavity and connected to a water bottle. Although continuous aspiration of air was thus established the lung would not expand. The patient's condition became progressively worse, his dyspnea more severe, and he died August 15, 1940.

Autopsy: Gross Description: The body is that of an elderly white male. The frame is long, though build is slender. There are no skeletal defects. There is no edema. A mid-line incision is made, exposing the thoracic and peritoneal cavities. The latter contains no free fluid. The gastro-intestinal tract is partially filled with gas and liquid material. It presents no gross pathology. The liver is not enlarged. Serial section reveals no evidence of congenital defects or cysts. The spleen is not enlarged. Cut section shows dark red pulp with clearly outlined Malpighian bodies. The adrenals and pancreas show no gross pathology. The kidneys are large and smooth. Each shows many small cortical cysts. These average about the size of a pea. There is no appreciable thinning of the cortex of either kidney. There is slight increase in amount of pelvic fat and vessels are thick walled. The heart is found in the usual position in the pericardial sac. There is no increase in pericardial fluid. The organ is not enlarged. The chambers are not dilated and walls not unusually thick. The valves are competent. The coronary arteries show considerable thickening, particularly the left. However, the lumen of the latter is patent. Cut sections through the left ventricle show diffuse whitish mottling near the endocardial surface. No fresh areas of infarction encountered. The right lung is adherent posteriorly. The upper lobe shows

a huge cyst about the size of an orange. This occupies about two-thirds of the entire lobe. The remainder of the lung shows pleural surface to be covered with grape-like cysts ranging in size from that of a pea to that of an acorn. There is slight congestion of the lower lobe, but no frank consolidation. The left lung is collapsed and shows great numbers of cysts, which are just beneath the pleural surface. Some of these push up, forming small, irregular pouches. Distribution is generalized, though most marked in upper lobe. No pulmonary emboli can be demonstrated.

Microscopic: *Lungs:* The sections show numerous cysts of all sizes, lined by cubical epithelium. The alveoli themselves are dilated in many areas with thin septal walls. Several sections show inflammatory exudate chiefly composed of polys covering pleural surface. Under this there is a thin layer of granulation tissue. Sections from bases show a few patches of consolidation surrounding bronchioles. The latter are filled with leucocytes and fibrin, and there is desquamation of epithelial lining. *Heart:* The arterioles show thickening of the intimal type. A section taken through left ventricular wall near the apex shows many discrete foci of fibrosis. The vascular channels are wide, and there is a perivascular connective tissue proliferation. Other sections show minimal changes in staining or morphology. *Liver:* There is atrophy of liver cells around portal channels. The interstitial spaces are filled with red blood cells many of which are disintegrated. *Spleen:* There is slight increase in fibrous tissue framework and Malpighian bodies are sharply defined. *Kidneys:* The arterioles are thickened. The glomeruli are intact. There is moderate cloudy swelling of the tubular epithelium.

Final Diagnosis: 1. Polycystic lungs. 2. Arteriosclerosis of coronary arteries with patchy areas of fibrosis in left ventricle. 3. Bilateral cortical cysts of kidneys. 4. Acute pleuritis. 5. Hypostatic bronchopneumonia. 6. Chronic passive congestion of liver.

CASE II.—A male child, six months of age, was admitted to Johnston-Willis Hospital, October 10, 1938, on the service of Dr. James B. Stone. His parents were healthy and delivery was normal. He had been well until about a month prior to admission to the hospital when he developed an upper respiratory infection. During the course of this he developed bilateral otitis media and both ear drums

had been incised. He subsequently had a persistent diarrhea and his stools frequently contained blood. On admission to the hospital he was having fever of about 101 degrees daily, there was a purulent discharge from both ears, he was having daily from ten to twelve stools, many of which contained blood, and he appeared dehydrated. The urinalysis was normal. The blood picture was that of a moderately severe microcytic anemia with a leukopenia. Of sev-



Figure 3. Case 2—Showing consolidation of left lower lobe. Probable atelectasis in right cardio-phrenic angle. (4-28-39)

eral leukocyte counts the highest was 5,700, the lowest 2,100. Cultures from the ears showed a mixture of staphylococcus albus and bacillus influenzae. The patient had no cough at this time and x-ray examination of the chest showed nothing more than some increase in the hilum shadows and an increase in bronchial and pulmonic markings. Soon after entering the hospital, however, he developed a diffuse bronchitis and his chest was x-rayed again, with the same result. He was treated for his ear infection and diarrhea along general lines and was given sulfanilamide. He was also given several small transfusions. He improved very slowly and after about two months his otitis apparently had cleared up; he was having two to three soft stools daily,

was taking feedings well and gaining weight, and was discharged from the hospital December 24, 1938.

Patient was re-admitted to the hospital February 10, 1939. He had been getting along very well and gaining weight until about ten days previously when he developed a head cold and cough. This had become quite severe and was accompanied by high fever. At this time the findings in the lungs were those of a diffuse bronchopneumonia. The ears apparently were not involved. Examination of the blood showed a moderate anemia and leukopenia.



Figure 3. Case 2—Consolidation of right upper lobe. (5-18-39)

Under treatment he improved and was discharged from the hospital March 19, 1939, about five weeks after admission. During the next few weeks he had frequent mild colds of short duration but, in spite of these, took his food well and gained weight. On April 28, 1939, he was taken rather abruptly ill with high fever and severe coughing and was again brought to the hospital. On this admission he had what was thought to be a pneumonic consolidation of the left lower lobe with small scattered areas of consolidation in the right lung. There was at this time a total leukocyte count of 22,000, with a marked increase in the polymorphonuclear cells. He was given sulfapyridine and responded dramatically.

His temperature was normal within six days and he was discharged on the thirteenth day. X-ray examination of the lungs on discharge from the hospital showed both lungs to be clear. The patient was at home but two days when he again had a sudden rise in temperature and cough, and was returned to the hospital. On this admission he was found to have a consolidation of the right upper lobe. He was again given sulfapyridine but this time responded slowly. He remained in the hospital for the next four months during which time he had two more episodes of what appeared to be pneumonia. On one occasion there was consolidation of the right lower lobe, and on another the left lower lobe. He frequently had recurrences of the diarrhea and once a return of otitis media. In the meantime bronchoscopy had been done, which revealed only a large quantity of purulent material in all the bronchi. In view of the repeated attacks of pulmonary infection, congenital cystic lung disease was suspected although this diagnosis could not be definitely established from the x-ray films. At the request of his parents he was discharged from the hospital September 17, 1939. His condition was poor and became progressively worse and he lived only a short time after leaving the hospital.

Autopsy: Gross Description: The body is that of a year old male infant. The skin is tightly stretched on the frame, the mucous membranes dry and parched, the eyeballs sunken. The fingers and toes show slight clubbing. The abdomen is slightly distended and there is bluish discoloration of the skin of the lower abdomen. No deformities. There is extremely little subcutaneous fat. The thorax is opened by a T-shaped incision. The lungs are tightly plastered to the chest wall, both anteriorly and posteriorly. There is no free fluid. The thymus is large—weighs 45 grams. The lungs and heart in the pericardial sac are removed together. The left lung is spongy in consistency and shows no evidence of true consolidation, although there is a moderate degree of dependent congestion at the base. No pulmonary emboli are encountered. The bronchial tree is essentially normal. Some of the smaller sub-divisions of the bronchi appear dilated and thickened. The right lung shows numerous whitish areas on its external surface about the size of a pea. Cut section reveals entire upper lobe to have a honey-combed appearance. Close inspection reveals this to be due to multiple small cysts which, although present

throughout the entire lung, are more marked in the upper lobes. These are filled with thick creamy yellowish pus and the lung shows numerous confluent patches of consolidations. The heart is not enlarged. There is no increase of pericardial fluid. The organ itself shows no dilatation of chambers, the valves are competent and the myocardium appears healthy though pale. Autopsy was limited to chest.

Microscopic: Sections through the right upper lobe of the lung show the alveoli to be filled with fibrin, red blood cells and leucocytes, many of which are polys though predominantly mononuclears. There are scattered cavities lined with cuboidal epithelium and filled with leucocytes and fibrin. The capillaries are uniformly dilated and engorged with red blood cells. The thymus is unimportant.

Final Diagnosis: 1. Congenital polycystic lungs—chiefly right upper lobe. 2. Lobar pneumonia—right upper. 3. Confluent bronchopneumonia—lower lobes both lungs and right upper. 4. Malnutrition. 5. Dehydration.

COMMENT

The two cases present different manifestations of cystic lung disease. The first, occurring in an elderly man, represents that type of the disease characterized by multiple large bladder-like cysts. The condition had probably been present for a long time and had produced few symptoms until spontaneous pneumothorax occurred. There was no clinical evidence of infection and the predominant symptom, dyspnea, was the result of gradual diminution of functioning lung tissue, and climaxed by collapse of the lung. The latter was caused by rupture of a cyst and the resulting spontaneous pneumothorax.

The second case occurred in an infant and showed innumerable small cysts which had probably been present since birth. These were infected repeatedly and for long periods of time, and the effect of toxemia was marked.

Professional Building.

INDEPENDENT OCCURRENCE OF MULTIPLE PULMONARY ABSCESSSES—REPORT OF CASE.

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Multilobar or multiple abscesses of one or both lungs are observed frequently, but complete resolution of a pulmonary abscess with occurrence several months later of an independent abscess in the other lung is seldom encountered. The rarity of this sequence of events warrants the report of the following case.

The patient, a man 27 years of age, was admitted to Memorial Hospital on May 19, 1940, complaining of pain in the left side of the thorax and cough with expectoration of foul-tasting, malodorous sputum. Fourteen years previously he had been "run down", and because an intracutaneous injection of tuberculin had produced a positive reaction, he had been admitted to a sanatorium for tuberculosis, where he had remained for fourteen months with satisfactory improvement. Apparently

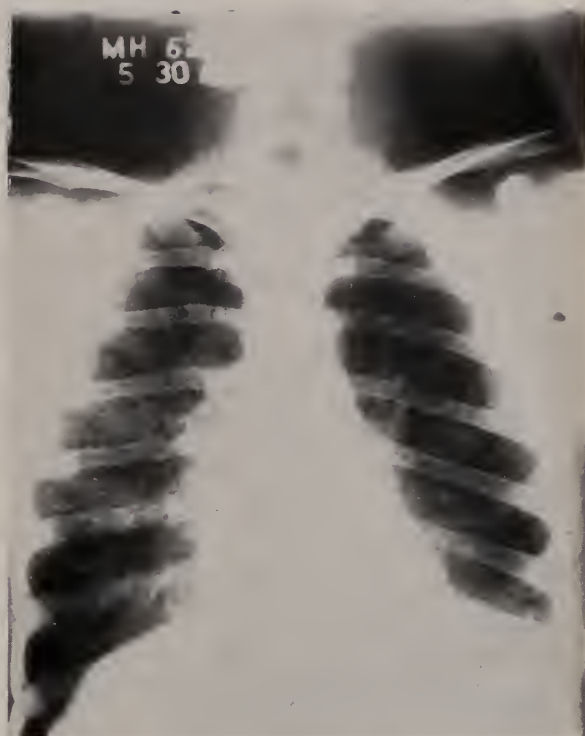
a definite tuberculous lesion was not demonstrated.

He had had various childhood diseases and pneumonia at an early age with uncomplicated recovery. Tonsillectomy had been performed several years prior to the present illness. Four weeks prior to admission to hospital the patient noted dull pain in the left thoracic region, the trouble being diagnosed pleurisy by his physician. He felt weak and preferred to remain inactive most of the time. When he was ambulant he noted shortness of breath and slight edema of the ankles. After two weeks, cough developed and soon became productive; as much as a cupful of foul sputum might be expectorated during a period of twenty-four hours.

The patient appeared flushed, and the temperature was 101.6 degrees; the pulse rate was 105 and respiration 28; the systolic blood pressure was



Fig. 1.—A. Abscess lower lobe left lung with fluid level.



B. Appearance of thorax eleven days later, showing almost complete resolution of abscess.



Fig. 2.—A. Infiltration with apparent excavation at base of right lung.



B. Roentgenoscopic appearance of thorax six weeks later, showing almost complete disappearance of area of infiltration.

130 with a corresponding diastolic pressure of 70. The teeth were in need of repair, and the gums were badly diseased. Rhonchi were present throughout both lungs. At the base of the left lung posteriorly the percussion note was impaired, and breath sounds and tactile and vocal fremitus were diminished over the same area. In other respects, general physical examination disclosed nothing abnormal.

Three examinations of sputum failed to reveal Bacilli of tuberculosis. Other laboratory findings were irrelevant save for 39,400 leukocytes per cubic millimeter of blood, and an estimation of the hemoglobin which was 60 per cent. Roentgenogram of the thorax showed a cavity in the lower lobe of the left lung with a fluid level and calcified nodules in the left hilar area (Fig. 1. A). The diagnosis was abscess in the lower lobe of the left lung.

Bronchoscopic examination under local anesthesia on May 21, 1940, revealed pus exuding from the posterior division of the bronchus to the lower lobe of the left lung with narrowing of the bronchial lumen. The stenotic bronchus was dilated with forceps, and the abscess was thoroughly aspirated. The following day the patient had normal temperature; within two or three days cough and expectoration had disappeared, and on May 31, 1940, he was permitted to return home. Roentgenogram at the time of dismissal showed the cavity completely closed, and the major portion of the surrounding area of infiltration had disappeared (Fig. 1-B). Leukocytes numbered 6,000 per cubic millimeter of blood, and estimation of the hemoglobin showed an increase to 90 per cent.

The patient was able to return to work within a month and remained well until November 1, 1940, when he contracted upper respiratory infection. He continued for three days with his work as a

salesman, but, because of chills, fever, and expectoration of a small amount of blood, he was hospitalized elsewhere where he remained until December 8, 1940, when he was transferred to Memorial Hospital for observation. At onset of the second illness roentgenography of the thorax disclosed an abscess in the lower lobe of the right lung. The left side appeared normal (Fig. 2-A). The temperature was elevated to 104 degrees. A slight, non-productive cough, which he had had, disappeared before the patient was hospitalized here.

The temperature was normal at the time of admission to Memorial Hospital and remained so during hospitalization. Physical examination revealed diminished breath sounds with bronchial breathing and many moist rales at the base of the right lung posteriorly, as well as an impaired percussion note over this region. Three examinations of sputum were again negative for bacilli of tuberculosis. Leukocytes numbered 8,800 per cubic millimeter of blood with a hemoglobin estimation of 84 per cent. The patient did not have any specific therapy, and as signs of disease in the thorax had disappeared and he felt well, he was dismissed from hospital on December 16, 1940. A month later the patient was entirely free from symptoms, and the roentgenogram demonstrated nothing abnormal (Fig. 2-B).

SUMMARY

A patient is described, who suffered from a single abscess in the lower lobe of the left lung. Although the abscess was of uncertain etiology, it probably resulted from aspiration of material from infected teeth. Rapid resolution followed bronchoscopic aspiration. After five months of health, the patient had another abscess, located this time in the lower lobe of the right lung; it resolved spontaneously.

OCULAR TUBERCULOSIS: A REVIEW AND REPORT OF FOUR CASES.*

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Much of the literature on ocular tuberculosis is the result of the efforts of observers outside of America. However, an intensive study of the problem has been carried on at Wilmer Institute, at Johns Hopkins Hos-

pital. As the fruit of much research, effort and study, Dr. Alan C. Woods and his co-workers have written extensively in the past few years. They have correlated and, in an orderly way, presented their observations on the diagnosis, therapy and immunology of ocular tuberculosis. Having nothing to add to

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these works, I review them with the desire to refresh our memory on a most important subject.

From the study of eyes with known tuberculous lesions, which have run a given course, and from animal experimentation in which tuberculous lesions have been produced by the injections of tubercle bacilli, three general types of ocular tuberculosis may be recognized.

First: The characteristic lesion with nodular iritis, tuberculoma of anterior or posterior uvea and miliary tubercles of the choroid.

Second: Lesions of the cornea, iris and choroid in which the attacks are self-limiting, have a tendency to recur, and lack of symptoms indicating tuberculosis as the cause.

Third: The rapidly progressive type with exudation, caseation, and ulceration, which perforate and destroy the eye in a short while.

The diagnosis of tuberculosis of the eye is, in many cases, not a positive diagnosis, but a presumptive or tentative one. We are unable to isolate the tubercle bacillus from the eye; biopsy is impossible and the other laboratory measures are of little or no value.

Our diagnosis is, therefore, based on:

First: The appearances and course of the disease, with its tendency to subside spontaneously and recur. This history, with the presence of old scars and the appearance of new lesions, first directs our attention towards the possibility of tuberculosis as an etiological factor.

Second: The exclusion of other causative factors, such as infected teeth, tonsils, sinuses, especially the gall-bladder as foci of infection, and syphilis, diabetes and other general diseased conditions must be carried out as far as possible. After the removal of possible foci of infection, the behavior of the eye may aid in establishing a diagnosis.

The lesions most difficult to differentiate from tuberculosis are the other infectious granulomata of the eye. Syphilis is usually recognized by a positive serological test in adults. Stigmata of the disease, as seen in teeth, face, etc., and the history of parental syphilis, are useful in congenital lesions.

Sarcoid is an infectious granulomatous disease characterized by nodular masses, especially about lids and face. Both eyes are usually affected; the reaction to tuberculin is very sluggish and antisyphilitic treatment is of no value, even though the Wassermann test may be positive. There may be transient

paralysis of the cranial nerves and swelling of the parotid gland. Microscopically, the lesion simulates tuberculosis except for the absence of central necrosis, though some consider them one disease.

Brucellosis may simulate ocular tuberculosis and there is evidence that periodic ophthalmia and moon blindness in horses is due to this infection. Agglutination tests should be made in an effort to eliminate it. No authentic case of human ocular brucellosis has been reported.

Lymphogranuloma inguinale may be an entity, but little is yet known of its true effect on the eye.

Third: The general tuberculosis state of the patient is not conclusive evidence of ocular tuberculosis but is further presumption of such a state. It is generally believed that the eye lesion is secondary to some distant tuberculous focus elsewhere in the body. Few cases of ocular tuberculosis have been reported among active pulmonary tuberculosis cases in sanatoria (1 per cent). In genito-urinary and bone tuberculosis it is more frequent (7 per cent). Werdenburg has stated that the lymph glands at the hilus of the lungs are the usual primary focus. He reported that 60 per cent of his cases showed X-ray signs of hilus tuberculosis but at Wilmer Institute only 50 per cent showed X-ray evidence of distant tuberculous lesions. It may be stated, then, that, while the evidence is not conclusive, hilus tuberculosis lends weight to the possibility of ocular tuberculosis.

Fourth: The tuberculin test usually employed is the Mantoux or intradermal method but is not conclusive evidence of ocular tuberculosis, since many normal individuals may react to .1 mg.

Of 180 diagnosed cases of ocular tuberculosis at Wilmer Institute:

96 or 53.4% reacted positively to .001 mg. tuberculin;
75 or 41.6% reacted positively to .01 mg. tuberculin;
9 or 5% reacted positively to .1 mg. tuberculin.

In ten cases of proven ocular tuberculosis (biopsy, etc.),

60% reacted to .001 mg. tuberculin;
20% reacted to .01 mg. tuberculin;
20% reacted to .1 mg. tuberculin.

The conclusions drawn from these studies are that a negative tuberculin skin test does not rule out ocular tuberculosis, nor does a positive skin test mean that a given ocular lesion is tuberculous. All that can be said is that, a high degree of skin sensitivity suggests that the ocular lesion is tuberculous.

Other tests such as complement fixation, sedimentation rate and blood cultures are of little value.

It has been determined that skin sensitivity is fairly parallel with ocular sensitivity.

Fifth: The therapeutic test is of some value in diagnosis. Not infrequently the patient shows immediate and dramatic response to tuberculin therapy. It should not be forgotten, however, that this is a self-limiting disease and the improvement may be simply a recession of the inflammation.

Conclusions drawn from the inoculation of animals with tubercle bacilli are that immunity and allergy are involved in the spread of the ocular lesion and determine the course of the disease.

It is probable that the process may be explained by the following sequence of events:

Tubercle bacilli from a distant lesion, probably a hilus gland, are deposited by the blood stream into the eye. The bacilli produce sensitivity in the eye and after a few weeks further tuberculo-protein brought to the sensitive eye produces inflammation. If the eye is not very sensitive to tuberculo-protein and the number of bacilli are not too great, a slow development of disseminated ocular tuberculosis takes place, with tubercle formation. Encapsulation occurs and the spread and growth of the organisms is controlled. The inflammation produced, is of low grade and self-limiting. With the progression of the acute inflammatory stage, there is a gradual diminution or exhaustion of the vascular reactivity of the eye. With this exhaustion the eye becomes quiescent and healing and scarring occur. If all the bacilli have not been destroyed, however, the eye again becomes hypersensitive in time and the inflammation recurs.

If, on the other hand, the many virulent bacilli lodge in an eye and sensitivity is great, further tuberculo-protein results in an acute and fulminating inflammation, the organisms rapidly grow and the lesion spreads, causing caseation and perforation with loss of the eye. This may be graphically stated as:

Virulence, number of bacteria, degree of allergy determine resistance to the disease.

Low allergy, virulent bacilli, high resistance, mild inflammation, soon quiescent.

High allergy, many virulent bacilli, low resistance, yield spreading, caseating tuberculosis with perforation and loss of the eye.

Therapy: Local measures have little or no effect on ocular tuberculosis. Colloidal gold is of ques-

tionable value and some danger, while X-ray therapy might cause serious activity. Phototherapy and Beta radium rays are sometimes spectacularly helpful in corneal tuberculosis, probably by increasing immune bodies.

The objectives sought in the treatment of ocular tuberculosis are the permanent removal of the fatal ocular sensitivity to tuberculo-protein (or allergy) and subsequent encapsulation and destruction of the tubercle bacilli.

It has been shown (P. A. Lewis) that when colloid is injected into a patient, it has a predilection for inflammatory tissue and is precipitated in it. Tuberculin is a colloid and it has been shown to have a predilection for the tuberculous inflammation and has been found in tubercles.

To remove the ocular sensitivity to tuberculo-protein small doses of tuberculin are given intramuscularly in slowly ascending doses. These injections begin with a dose much below the ocular sensitivity and an effort is made to carry this up to 100 mg., if possible to do so without reaction, and this maximum dose is maintained weekly for one year or more. Every three months the patient is re-examined, over a period of several years, to determine if sensitivity has recurred. If the tuberculin test is positive with small doses, treatment is again begun even though the eye lesion is quiet.

Great care should be exercised to avoid either a local or focal reaction to the tuberculin, for ocular sensitivity is probably greater than that of the skin and a reaction may be fatal to the eye.

This prolonged desensitizing treatment is in contradistinction to the old perifocal method, in which a course of tuberculin was given and, when the eye became quiet, specific treatment was stopped, hoping for local immunity instead of desensitization.

In the fulminating, caseating type of ocular tuberculosis, the eye is so sensitive that even the smallest doses of tuberculin may cause it to flare up and spread the lesion. These cases, usually occurring in the anterior segment of the eye, have been found to lack antibodies in the aqueous. After paracentesis the restored aqueous contains many times as many antibodies as the original aqueous. A paracentesis in these cases is often followed by dramatic improvement in the condition and then tuberculin treatment can be carried on without danger.

As in other forms of tuberculosis, the patient's resistance and immunity are increased by rest, freedom

from strain, cleanliness, fresh air, sunshine and diet. While sanitarium treatment is not necessary, these general measures should not be neglected.

Case 1. Mrs. J. C. H., age thirty-one. This apparently healthy young woman had choroiditis in 1929. Her tonsils had been removed nine years prior to this attack, and at this time a secondary tonsillectomy was done. There was a central scotoma at this time which gradually cleared up.

Patient has lost three children—one miscarriage at three months, one abnormal child died fifteen months after birth, and one child lived a week.

There is a history of syphilis in parents, contracted since her birth, but no personal illnesses other than eye trouble.

In January, 1935, patient had slight attack of choroiditis, at which time atropine and potassium iodide were given. The eye cleared up in about four weeks.

In October, 1938, patient had an attack of choroiditis in right eye. At this time vision was 20/50. In the macula region there was an old scar with some evidence of activity just above the macula and edema extending into it. The scotoma covered the point of fixation but varied in density and size.

This patient was studied thoroughly. All blood dyscrasias, foci of infection, including gall-bladder and cervix disorders were carefully ruled out. Her blood, Kahn and Wassermann, was negative; her spinal fluid negative; and colloidal gold curve normal. X-ray of chest showed few old hilus glands.

A tuberculin test was done and was negative with 1/100 mg., and two plus with 1/10 mg. O.T. After consultation with Dr. Edwin Burton, at Charlottesville, tuberculin therapy was decided upon in spite of low skin reactivity. The lesion responded nicely, central vision returned and the lesion healed clinically.

No further tuberculin treatment was given after the 10 mgm. dose was given by gradually ascending doses.

In April, 1940, another attack occurred. This time the active lesion was at site of previous excentric one, but macula was very edematous and scotoma central and large. The spot was enlarged and there was a small, round active lesion just medial to nerve head margin. This was dirty white with fuzzy margins. There were some fine floaters in vitreous, disc was indistinct, and her vision was 20/200.

Potassium iodide, vitamin B, and general constructive treatment was instituted, while again she was carefully studied for a focus of infection or disease. Nothing could be found other than a two plus tuberculin reaction to 1/10 mg. O.T.

She was referred to Hopkins for consultation and after careful study a diagnosis of miliary tuberculosis of the choroid was made there.

She is under tuberculin treatment now, and the scotoma has become excentric and her vision is 20/25. The lesions are inactive and healed in appearance and the media has entirely cleared up.

In spite of feeling the lues might be responsible here, every clinical study at three different times was negative. The old perifocal treatment here was entirely inadequate and the disease recurred. The lesions were typically small rounded areas like tubercles. The clinical results of treatment have been dramatic. She will continue her treatment over a period of at least two years.

Case 2. Mrs. H. M. C., age fifty-five. In childhood she had trouble with glands of neck. Twelve or fifteen years ago patient had ulcers on both corneas and they were slow to heal and recurrent in nature. Her tonsils were removed and in about one year, after tonsillectomy, the ulcers healed, leaving scars in both eyes. Following this the eyes would get red and inflamed but no ulcers were noted.

Otherwise, the patient had been well and stout. In April, 1939, a small red area appeared on the sclera of the right eye, external to limbus. This was treated by drops but failed to subside. In fact, the lesion spread for two weeks, so that, when we were consulted, it was 2 by 1½ cm., violet reddish color, raised, and not movable with conjunctiva. There was ciliary congestion, the corneas scarred and her vision was 20/50 with a glass.

Her upper teeth were missing and the lowers negative by repeated X-ray examinations. Her sinuses were, clinically and from X-ray study, negative. Her Wassermann and Kahn were negative.

Physically, her chest was entirely negative but no chest X-ray was done. The cervical glands were not palpable.

1/100 mg. of P.P.D. was given and at the end of forty-eight hours a three plus reaction was present. This was raised, brownish red and vesiculated and lasted for many weeks.

She was treated with tuberculin and in a few

weeks the lesion had disappeared except for some edematous appearance at site of lesion.

On seeing her April, 1940, a tuberculin test was done and was 2 plus with 1/100 mg. O.T. Further treatment was advised in spite of a quiet eye.

Case 3. Mrs. M. M. R., age seventy-three. About twenty-five years ago patient had ulcers on both shins and arms. These failed to respond to treatment and large area of cheesy material was scraped out. This was white and hard and when the swellings were opened up, white watery material exuded. Her blood was sent away and, "she was given an injection of medicine in her arm". Immediately the ulcers healed and no further trouble was experienced and no further treatment given.

Her health has never been good but no specific ailments could be elicited. She has several normal and healthy children but her twenty-three-year-old grand-daughter has active tuberculosis at this time and is awaiting sanitorial treatment.

She consulted me about her eye August 9, 1939, at which time her left eye had been hurting, was red, and had many floating objects before it. This had been going on about one week or ten days when first seen.

There were deposits on the cornea which were larger than usual descemetitis and more centrally arranged, and the iris was adherent at several points. There were about five dirty white masses lying at edge of the pupil and between the anterior capsule and the iris. These were rounded in appearance and varied from one or two millimeters in diameter to very much smaller ones.

Her right vision was normal and the left corrected to 20/40. There was ciliary congestion with cells in the anterior chamber and uveal inflammation with vitreous opacities.

Her blood, Wassermann and Kahn, tests were negative. Her teeth were artificial and gums X-rayed clear. Her tonsils were small and unimportant in appearance and her sinuses, clinically and from X-ray study, negative. Her physical examination, including kidney study, was essentially negative. Agglutination tests were negative. X-ray of her chest showed old fibrosis and calcified glands. Her skin reacted 3 plus to 1/100 O.T. and this remained for many weeks as a brown spot. Tuberculin treatment was begun and the Keppie nodules dramatically disappeared. The exudate on the cornea cleared and the vitreous opacities disappeared. The

eye became entirely quiescent and, when seen April 19, 1940, nine months after first visit, her vision was corrected to 20/20, pupil freely movable, with no evidence of any disease. She is continuing her tuberculin therapy.

Case 4. Mrs. J. T., age fifty. For many years patient has had trouble with her eyes becoming inflamed. She has had ulcers of both eyes. She would have a severe attack of inflammation and this would subside and sometimes entirely clear up. Her vision has been impaired for years because of scars on both corneas.

In August, 1938, patient had another attack of inflammation in the right eye. This appeared as a white area on the cornea at its margin and gradually spread towards center. She treated this as she had in the past, but it failed to respond. Her local physician treated it with drops and finally she was referred to Dr. E. R. Miller, of Harrisonburg.

Under date of October 14, 1938, Dr. Miller made a note that there was "a large, heavy opacity of the right cornea with ciliary congestion". Her vision at this time was light perception. The old scars were more marked on the left eye, and vision was 20/200. She was treated with hot applications and atropine and referred to me after failure of eye to improve. The process was very slow, but, in spite of treatment, the lesion spread.

Several decayed teeth were removed and on November 11, 1938, infected tonsils were removed. Her sinuses were apparently normal and her Kahn and Wassermann negative.

The patient was lost sight of until January, 1939, two months after first being seen by me. The lesion was no smaller and the eye still inflamed and was a heavy, dirty, white, elevated mass of exudate which stained lightly with fluorescein and was vascularized. It covered two-fifths of the cornea and extended irregularly over half of pupil.

On January 11, 1939, 1/100 mg. of old tuberculin was given and a four plus reaction obtained. This test left a brownish disquamated area which lasted for weeks.

X-ray of chest showed fibrosis of the left apex, and old hilus lesions. Agglutination tests were negative. Tuberculin test showed one plus with strong P.P.D. 1/10 cc.

Under tuberculin treatment the corneal lesion promptly began to clear by thinning centrally. The progressive clearing has continued until, at the pres-

ent time, there are a few scars on cornea, excentricly placed. The patient was seen at her home and says she sees well in this eye, but has not returned to office for further study.

This patient was given ascending doses of tuberculin up to 100 mg., and the eye has remained quiescent for over one year. She will be encouraged to return for further study and treatment, if indicated.

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TORULA HISTOLYTICA (BLASTOMYCOIDES HISTOLYTICA) MENINGITIS:

Report of a Case With Recovery

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In a recent article Robertson and others¹ reported sixty-five cases of infection of the central nervous system caused by the *Torula Histolytica*. Magruder² has added three cases to the literature and Holt³ one. Additional important information is included in articles by Shaw⁷, Longmire⁸ and Levine⁹.

The case here recorded is of additional interest in that the patient recovered from the acute illness and returned to the hospital for examination and further study two years later.

CASE REPORT

K. J., colored female, age eighteen. This colored female was admitted to St. Philip Hospital on 3-20-38, because of headache, stiffness of the neck and delirium. From the patient's family it was learned that she had been in good health until three weeks before this date. At this time she began complaining of severe frontal headache which was continuous in character, and failed to respond to the usual therapeutic measures. Two days after the onset, she was seen by her family physician, and a tentative diagnosis of migraine and sinus trouble was made. Shortly after this she began to complain of a sore neck, stabbing pains about the eyes and failing vision. These symptoms remained essentially unchanged until one week before admission when she became irrational, and seemed to suffer more with headache and pains about the eyes. The parents felt that she had had some fever during the entire sickness, but there was no record to this effect. There had been no chills.

In other respects her history was negative except

that she was known to have injured her right foot about one week before the onset of her headache, and this member had become swollen and sore. It had apparently healed completely after six or seven days.

Physical examination: A general survey showed a well developed and nourished, but dehydrated young negress who was lying flat in bed, irrational and uncooperative; temperature 104, pulse 140, respiration 28, blood pressure 140/85. The cranium and scalp were negative except for rather marked tenderness over the sinuses. There was bone and air deafness on the right. On examination of the eyes, the pupils were regular, equal and slightly dilated: they reacted very sluggishly to light and accommodation. There appeared to be complete loss of vision bilaterally, but the patient's lack of ability to cooperate prevented an exhaustive examination. A bilateral vertical nystagmus was present, and there was bilateral sixth nerve paralysis. The right optic disk showed a slight degree of choking, and there was marginal blurring of the left disk. The neck was rigid and resisted motion in all directions. On examination of the chest and lungs there were no pathologic findings. The heart tones were clear and of good quality. The abdominal examination was negative. There was a small encrusted lesion on the dorsum of the right foot without evidence of surrounding cellulitis or lymphangitis.

Reflexes	Right	Left
Biceps	0	+
Triceps	0	+
Hoffman	0	0
Abdominal	++	++

<i>Reflexes</i>	<i>Right</i>	<i>Left</i>
Patellar -----	0	++
Achilles -----	0	++
Ankle clonus -----	0	0
Babinski -----	0	0
Brudzinski and Kernig	++++	++++

As a result of these findings a tentative diagnosis was made of: 1. tuberculous meningitis, or 2. brain abscess.

A lumbar puncture done immediately after entrance into the hospital showed slightly hazy fluid under 400 mm. of pressure, and it was noted at this time that there were present in the fluid a number of small flecks of white material. Examination of the spinal fluid showed white blood cells 262, polymorphonuclear neutrophils 88 per cent, lymphocytes 12 per cent, sugar 17 mgms., chlorides 669 mgms., mastic 3-3-4-1-0, globulin heavy trace, Wassermann negative. Smear and culture were negative for the usual organisms, including meningococci, pneumococci, pyogenic organisms and tubercular bacilli.

General laboratory findings: Urine: color, dark brown; reaction, acid; specific gravity, 1.020; albumen and sugar, negative; acetone, positive; white blood cells, 1-2; red blood cells, 0; casts, 0. Blood: Red blood cells, 4,400,000; hemoglobin, 82 per cent; white blood cells, 10,900; polymorphonuclear neutrophils, 81 per cent; lymphocytes, 13 per cent; monocytes, 6 per cent. The blood Wassermann was negative. Blood cultures were negative. Tuberculin test 1-10,000 was negative.

Hospital course: After admission to the hospital, the patient continued to run a constant temperature elevation, with variations from 99 to 103.2, and with a pulse rate of 90 to 140 per minute, for about ten days. During this time she was irrational, restless and very difficult to manage, and there was no clinical improvement noted except that she regained her hearing in the right ear. Treatment consisted solely of fluids orally, sedatives and repeated lumbar punctures with findings showing no material change from those noted in the first examination. The pressure remained constantly elevated, and the white blood cell count of the spinal fluid varied from 131 to 333 per cubic millimeter. On 4-2-38 it was learned from the laboratory that yeast-like bodies had been found in four of the five specimens of spinal fluid examined; and that, although the exact classification had not been made, they were thought to be *Torula Histolytica*.

In view of these findings active therapy was begun with iodides and, since the patient could not cooperate sufficiently to take medication by mouth, intravenous sodium iodide was given. Intravenous injections of 15 gr. were given daily from 4-2-38 to 4-5-38. At this time her condition appeared to have become much worse with extreme restlessness and occasional attacks of vomiting which were described as almost projectile in character. No further choking of the optic disk was noted, but it was decided to do a cisternal puncture for fear that a block might have occurred. This was done, and clear fluid under 200 mm. of pressure was obtained. On 4-9-38 treatment with intravenous iodides was begun again, and the dose was increased to 30 grs. daily.

On 4-4-38, two days after the beginning of iodide therapy, there began a slow but definite decline in the temperature curve; and in the week, between 4-7-38 and 4-14-38 there was no elevation above 100 degrees Fahrenheit. The patient continued to vomit three or four times daily, but seemed more alert and cooperative. By 4-20-38 the temperature had established itself at a normal level, and the vomiting had completely subsided. At this time it was noted that she could distinguish light from dark, and could move her right eye laterally. She was now mentally alert, and talked rationally with the examiner. The intravenous injections of sodium iodide were discontinued on 4-20-38, and she was placed on saturated solution of potassium iodide orally to reach a maximum dose of 20 drops three times a day. She remained under observation in the hospital until 6-23-38, during which period she showed no further change in her general physical condition.

On 3-6-40 her family physician wrote to the effect that she was then in excellent general health, and could distinguish the shadowy outline of an individual.

On 9-4-40 she was referred again to St. Philip Hospital because of a recurrence of headache and slight stiffness of the neck. These symptoms had been present for about seven days prior to her readmission. Physician examination showed the following features: Temperature 99.8; pulse 100; respiration 22; blood pressure 124/80. The patient was well nourished and mentally alert, but complaining rather bitterly of headache. An extreme degree of optic atrophy was present bilaterally. Light perception was possible, but no other visual abilities

were retained. There was a scaling, brawny dermatitis on the dorsum of each foot. A lumbar puncture revealed spinal fluid under a pressure of 330 mm. in which there were thirty-two white blood cells of which twenty-eight were polymorphonuclear neutrophils. The protein content of the fluid was 125 mgm. Cultures from the spinal fluid and urine were positive for *Torula Histolytica*. The patient was discharged to her family physician after three days with instructions to continue the use of iodides in large doses.

COMMENT

Stoddard and Cutler⁴, in 1916, using the organism isolated by Frothingham⁶ in 1902 were able to produce brain lesions by the inoculation of experimental animals. The organism was called *Torula Histolytica* by these workers. Freeman⁵ summarized the available literature and offered important observations on the disease. Clinically the condition is characterized by headache, nuchal rigidity, insomnia, amblyopia and diplopia. It is particularly confusing on account of its close resemblance to tuberculous meningitis, brain abscess and brain tumor. At the time of his report Freeman found no record of a case with recovery, and the disease was considered by him to carry a 100 per cent mortality rate. The meningitis produced by the *Torula Histolytica* causes a granulomatous lesion at the base of the brain. The cerebral cortex is invaded in approximately 50 per cent of the cases, and is characterized by the formation of blisters or pits which contain a clear or turbid gelatinous material. Microscopically the meningeal lesions show a diffuse or focal granulomatous change with endothelial hyperplasia, fibrosis and giant cell formation. The perivascular lesions show the formation of cysts with collections of organisms and their capsules. The granulomata appeared to be aggregates of endothelial cells which have phagocytized the organism. In certain cases embolic lesions result

in which capillaries are occluded by large groups of organisms.

CONCLUSIONS

1. Meningitis caused by *Torula Histolytica* is being recognized with increasing frequency.
2. The mortality rate remains high and no specific treatment has been devised. Iodides remain the treatment of choice.
3. When recovery from acute infection occurs the disease usually becomes chronic and complete recovery is rare.
4. Invasion of the brain is more frequent in *Torula* Meningitis than in bacterial infections of the meninges.
5. Involvement of the cranial nerves results in most cases.
6. The case reported is one of proven *Torula Histolytica* infection which survived the acute invasion. Examined two years later the organism was still found in the spinal fluid, and the patient presented symptoms and signs of a chronic meningeal infection.

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VERUMONTANITIS.*

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This paper is based on data from a series of cases taken from the records of the past eighteen months, which were given the diagnosis of verumontanitis or

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seminal colliculitis for want of a more comprehensive term describing the symptom complex attributable to congestive and inflammatory lesions of the prostatic urethra, prostate and seminal vesicles. Pathology of the verumontanum was a common finding in all of

these cases but the lesions varied in degree of severity and were accompanied in some cases by lesions of the prostate, seminal vesicles or the adjacent urethra or by a combination of lesions of all.

Briefly reviewing the anatomical features of the prostatic urethra: it extends from the vesicle orifice to the external vesicle sphincter and is surrounded throughout by the prostate gland, the multiple ducts of which open into it. The urethral crest, or verumontanum, is simply an elevation of the urethral mucosa produced by the entering ejaculatory ducts and sinus pocularis or utricle. These give to it structural entity. From a clinical standpoint the verumontanum should be considered as being composed of three parts, the urethral mucosa covering it, the glandular sinus pocularis which forms its main bulk, and the right and left ejaculatory ducts passing through it. The sinus pocularis has been shown to be the common duct of a small gland, the utricle.

The function of the verumontanum is uncertain. The close embryologic and anatomic relationship of this small elevation to both the urinary (urethra) and genital tracts (ejaculatory ducts) gives rise to a complexity of clinical manifestations with disease or abnormality. Some of these disturbances are primary, but the majority are secondary to some abnormality and disease elsewhere. The main clinical effect on the urinary tract is some disturbance of micturition, and on the genital tract, of the sexual function. Combined disturbance is the rule, so that no abnormality or disease stands out as a distinct entity.

The etiology in these cases is often obscure. About 20 per cent admitted a previous gonorrheal infection six months to twenty-six years before applying for treatment for their present condition. One patient dated his trouble following catheterization after operation for appendicitis. Two patients had a definite endocrine imbalance, being extremely obese and giving low basal metabolic tests. One patient admitted excessive masturbation. The youngest patient of this group was nineteen years of age and the oldest fifty-seven. The majority were from twenty to thirty-nine years of age. Two-thirds of the patients were married.

Verumontanitis does not particularize inflammation of the urethral surface, the utricle, or the ejaculatory ducts. Through the urethroscope the lesions observed on the verumontanum are varied in character. There may be extreme congestion and swell-

ing, the part appearing a brilliant red and bleeding on the slightest touch. The sinus pocularis and the ejaculatory ducts may be inconspicuous because of the intense edema, and, again, may be most prominent, their openings gapping widely. In some cases the veru is distinctly granular and varies in shape. Polyps and cystic changes have been reported but were not seen in this series. The urethral floor posterior to the veru may be eroded or granular, highly inflamed and bleed easily on contact with the urethroscope.

In four of the twenty-nine cases a definite prostatitis accompanied the lesion in the prostatic urethra. In each of these patients there was considerable pus in the prostatic secretion. In nine patients the prostate was described as congested. In these cases no pus was found in the expressed secretion but per rectum the gland had a full boggy feel to the examining finger, with various degrees of tenderness. In two cases the urethra, both anteriorly and posteriorly, was definitely congested. There was a median bar present at the vesicle neck in two cases. In one patient the upper end of the epididymis was indurated and tender. One patient had an undescended testicle. In all cases, with one exception, the urine was clear.

As has been stated, symptoms may be either urinary, or sexual, or both urinary and sexual symptoms may appear in the same patient. Symptoms may be definite or vague. Frequency of urination was the most common symptom. In four cases the frequency was nocturnal, in six diurnal, and in three occurred both day and night. One patient complained that before he could go to sleep he had to get out of bed to void once or twice each night and was then bothered no more. In one case frequency was confined to the morning hours and the patient had no trouble during the afternoon and night. Urgency accompanied frequency in three cases, and dribbling following urination was present in four. Low back pain was complained of by six patients. Two patients had discomfort at the neck of the bladder; two complained of suprapubic pain. One patient stated that he had a feeling of pressure of the neck of the bladder, which was relieved on voiding; one that he had an uneasy feeling about the prostate and rectum. One patient complained of pain and soreness in the rectum. Itching in the urethra at the penoscrotal junction, along the urethra, or at the end of the penis was the complaint in three cases. One patient de-

scribed a feeling of uneasiness in the urethra and another a pain and soreness at the penoscrotal junction. Aching in the penis, pain in the urethra following intercourse, the complaint that the head of his penis feels cold, and moisture at the meatus were among the other symptoms presented.

In a third of the cases there was some complaint of sexual dysfunction. Weak or incomplete erections, premature ejaculations, blood tinged semen, loss of sensation during intercourse, lack of desire, and nocturnal emissions were the symptoms presented in the order named.

All of these cases show a certain degree of neurosis, but in none was this marked.

Treatment of the verumontanum and posterior urethra, while in principle the same, differs somewhat in detail depending upon conditions encountered. In those cases in which the symptoms are strictly urinary and without an underlying prostatitis and vesiculitis, instillations of silver nitrate solution through a Keyes-Ultzman syringe, or direct application of silver nitrate to the verumontanum through the endoscope is indicated. The strength of the silver nitrate solution to be used is judged by the tenderness and sensitivity of the parts. In the highly sensitive cases weak solutions should be instilled at first and the strength gradually increased at subsequent instillations. These instillations are given at five-day intervals. As tenderness decreases the gradual dilatation of the posterior urethra with sounds is valuable. This treatment has for its purpose the relief of congestion and shrinkage of the verumontanum with absorption of inflammatory products.

In those cases in which the prostate is involved, massage is indicated.

The above local treatment is the same in those cases in which sexual symptoms predominate or in which sexual and urinary symptoms occur in the same patient. The history is important in these cases and any abnormal sexual practices are to be discontinued. During the period of treatment abstinence from intercourse or attempted intercourse in cases of impotence and avoidance of any form of sexual excitement must be insisted upon. Administration of bromides to these patients helps to this end.

Experience with the administration of testicular hormone has not been sufficient to draw any conclusions as to its value in these cases. Those cases in which there is evidence of endocrine dysfunction (thyroid and pituitary) should have appropriate treatment as well as any systemic condition which may be present.

In our search for pus and blood in the urine the prostatic urethra with its various lesions and affections may be overlooked or neglected. While these affections may seem minor in a way, they are of major importance to those affected. The correlation of vague complaints with physical or functional disturbances of the prostatic urethra frequently requires more art than science. Important symptoms are many times withheld by the patient and minor ones emphasized. Often, too, the problem is elusive because there are few physical findings. There may be no pus, no blood, no tumor or lesion gross enough to see unless suspected and sought. Only a careful history and examination will keep these patients from being relegated to that group termed neurotics.

Medical Arts Building.

THE USE OF SULFAPYRIDINE AND SULFATHIAZOLE IN GENERAL PRACTICE.*

WILLIAM B. McILWAINE, M.D.,
Petersburg, Virginia.

Probably the most interesting and stimulating thing that occurs in medicine, from the point of view of the thousands of physicians in the active daily practice of our profession, is the discovery of some new therapeutic agent that adds a useful, serviceable and effective weapon to our armamentarium. After all, we are on the battle line in the fight for

life and health against disease. Ours is the privilege and great pleasure to lead the forces of medicine in the constant daily strife, to share intimately its successes and to feel poignantly its failures.

Think for a moment of the brave but futile fight against malarial fever and the joy of our ancestors in medicine at the knowledge of quinine as a curative agent.

Think of those great pioneers of the last century

*Read before the Fourth District and Southside Virginia Medical Society, December 27, 1940.

who sat by the bedside of many a child dying with the definite diagnosis of diphtheria, having no weapon to use against the awful scourge. No doubt they felt as helpless as a soldier armed only with a rifle, opposed by modern tanks and machine guns. Picture their joy on seeing the administration of anti-toxin save patient after patient who would have died before its advent.

Think of the hopelessness of every one in this room when confronted by the diagnosis of diabetes, especially in children. Hopelessly and helplessly we watched them wither away and die as we sat silently by, praying for something to help us help them.

And reflect for a moment on pellagra, on scurvy, on cretinism and on many other conditions in which we felt so hopelessly futile and inadequate, which now we face with confidence. Why? Because we have weapons with which to fight back, we are not unprepared; we are armed mentally, as was the doctor of old, and we are also armed with weapons of offense—not simply palliative, puny weapons of defense.

And now think of one of the greatest enemies the medical profession has to face, pneumonia. The mere thought of the diagnosis threw the patient, the family and the doctor into a mild panic. Why? Because pneumonia was a disease that killed! No foe more fierce, more relentless, no "blitz-krieg" more dreaded, and rightly so, for we had no offensive weapon to throw against it. Our anti-aircraft barrage of rest, air and symptomatic treatment failed so often! While they served well at times, they were no match for an enemy of such strength and ferocity.

Can we hold the patient until Nature and the anti-bodies, successful at times, but oh, so slowly, overcome the toxins being elaborated so rapidly? Anxious days, anxious nights, success or failure out of our hands, and no weapon or attack! We had to say: "I am sorry, mother, we know nothing to give that will cure the child; we will just have to wait." "But doctor, can't you *do something*? If you could *do something*!" And our reply had to be: "I am sorry, but we will just have to wait."

Five days, seven days, nine days, wait, hope, another day, another night, the crisis! It is out of our hands; Nature must help us with resistance against toxemia; then wait, hope, wait.

But now, thank God, in 1940 and 1941 the story has changed!

I saw a week-old infant—pneumonia in both bases, temperature 104, cyanosed, gasping for breath. In 1938, wait, but don't hope, for I am afraid you won't have many hours to do either, but in 1940—hope—vigorous attack. "I have something I can use now, mother." Sulfapyridine, a new drug, has proven very successful in pneumonia. The second day after its use the infant very definitely improves—blue, of course, and the lungs are still full, but there is little temperature, indicating toxemia is combated, while the infant begins to take nourishment, and by the fourth day our little patient is practically out of danger. Dramatic! Yes, but does anything in our beloved profession give us a more thrilling experience than a dramatic recovery? The main reason for rejoicing, however, is that we have an offensive weapon, a remedy to kill the killer. How does it work? Let the scientists and the laboratory workers worry about that! We doctors, we soldiers in the trenches do not now have to wait; we can attack, and as all good soldiers we love the attack.

A two-weeks-old infant with whooping cough and pneumonia in the right base did not prove hopeless in 1940. With the use of sulfapyridine the consolidation was completely cured in one week, and the infant, though still having whooping cough, was free from pneumonia. Sulfapyridine being stopped, the patient was brought back in less than a week with pneumonia in the left base—infant definitely ill. Sulfapyridine was given again, and in a week's time the pneumonia was under control.

These two cases are not unusual or isolated. All over the country there are hundreds of such cases—in old and young, in rich and poor, in the strong and the weak. The medical literature is being flooded with such reports.

And now I am starting in 1941 to use sulfathiazole and sulfapyridine prophylactically. And why not? It has not been proven to work that way! Not scientific, you say! Remember we are front line soldiers; when we see the enemy we do not have to wait for orders from headquarters through a long line of red tape. We must go for him, without waiting for the attack!

Again, it seems to me, that is common sense medicine.

What do we fear in grippe or a bad cold? Pneumonia. What do we fear in whooping cough and other contagious diseases, or post-operative? Pneumonia. If pneumonia develops, we have a remedy

of proven value. Why wait? Can you tell when pneumonia is going to develop? If it does develop, you would use sulfathiazole or sulfapyridine with confidence. Then, why not get the jump on those tough, little bacteria? Kill them off before they get a foothold. Why wait for the attack? Bomb their channel ports! Wipe out their bases of supply! Prevent their starting out into the blood stream; meet force with force!

The scientist, the laboratory worker, the investigator, has armed us with something we can use. It is our duty to use it.

And if one wants to be legalistic, we have a precedent. The ear, eyes, nose and throat men have been more active and aggressive than we. In abscessed ear they have used sulfanilamide to prevent mastoid infection, and it has done so well they are

complaining that they do not have to pay as much income tax as they would if they had a few dozen mastoids to operate on each winter.

I am not quoting any authorities to back me up, as there are not yet many to quote. This is my opinion and I take the blame for anything radical or unscientific that is being said. I can, however, quote analogy after analogy, as the prophylactic use of quinine, the prophylactic use of anti-toxin, the prophylactic use of orange juice—all of these cure disease after it arises and yet are also used to prevent the diseases they cure.

All I ask is that we, as practicing physicians, use what the scientists have given us, and, I may be wrong, but I believe together we can wipe pneumonia off the map.

434 West Washington Street.

IN DEFENSE OF A BAD TEMPER.*

J. SHELTON HORSLEY, M.D.,
Richmond, Virginia.

Among undesirable characteristics a bad temper often assumes a high rank. In defending a bad temper, however, it is not entirely *argumentum ad hominem*, though it may be partly this. Unlike a vicious or a violent temper, a bad temper probably might be controlled. Practically no vices or virtues are consistently always bad or always good. Human character, like a diet, should be made up of well-balanced elements. Too much salt, meat or sugar may be just as injurious as a deficiency of these things, and a disposition in which there is never any trace of occasional fractiousness would doubtless be uninteresting and boring.

The effects of the suppression of emotions and desires have been described by Freud, though his views do not seem to have the complete endorsement of many of the scientific psychologists. To give way on every occasion to the emotions is, of course, unwise; but to suppress them entirely may also be harmful.

The proper control of emotions is one of the chief factors in building character, but this does not necessarily imply that emotions should always be sup-

pressed. Instances of a disturbance of emotion commonly called bad temper or irascibility which was not completely suppressed, and which terminated in commendable results, are not infrequent. Christ, an exemplar of meekness and of love, indignantly drove out the money-changers from the Temple. There have been many persons whose rearing was not entirely happy, and who have been subjected to the bad temper of a stepmother or of parents, relatives or associates, and to whom these disagreeable episodes proved a stimulus for greater mental activity and endeavors than would have occurred if they had been placidly reared. Kipling is an example of this.

Bad temper is difficult to define, but we know it when we see it. It may approach, on the one hand, uncontrollable passion and, on the other hand, it may be so mild as to be a scarcely recognizable emotion. Definitions of the abstract are often unconvincing. No one has adequately defined truth. What is termed virtuous under some conditions may be deemed reprehensible and illegal under others. Murder is usually considered a crime, yet in self-defense or for the protection of others it may be justifiable or even commendable. And what shall we say of legal executions, or of the military hero who is often

*Read before a Club composed largely of professors and teachers.

glorified in proportion to the number of human lives he has taken?

Cannon, the eminent physiologist of Harvard, has shown how closely the emotions are associated with the secretions of the endocrine glands. The effects of impulses conveyed by the sympathetic nerves from emotions are continued through the endocrine system. Following this action of the sympathetic nerves the adrenal glands discharge a secretion which, among other things, releases from the liver glycogen, a reserve form of carbohydrate. If this is succeeded by marked physical or mental activity the excess carbohydrate in the blood may be burned up; but if not, it is often excreted through the kidneys, and sugar and even albumin may appear in the urine. Thus a bad temper can furnish the necessary additional fuel for unusual physical or mental effort.

It is well known that when anyone is overworked or tired he tends to be irritable. This is doubtless a defense mechanism. If, for instance, at the end of a trying day some unexpected task turns up or some undesired visitor or agent presents himself, one often becomes fractious. A tired or exhausted person should be let alone under such circumstances, because of the liability to the display of bad temper. If he were fresh and rested he might be more genial and cooperative. To impose an extra task or a disagreeable person or problem on one who is already tired means greater exhaustion and a still heavier drain upon his mental and physical resources. The exhibition of a bad temper under these circumstances is distinctly protective.

The justification of a bad temper may not be overwhelmingly proved, but there are many suggestive incidents which show that it is not always reprehensible. The bad temperish characteristics of Dr. Samuel Johnson, the lexicographer, and of Carlyle, are notorious, and as a result many a quip from them has been recorded. Johnson was once criticized by a lady for his erroneous definition of the pastern joint of a horse. She asked him why he committed such an error, and he peevishly replied, "Just ignorance, Madam, pure ignorance". Definitions are tricky things, and doubtless require a careful selection of words and an even temperament. Johnson must have been irritated, a not unusual condition for him, when he defined network as "something reticulated and decussated with interstices between its intersections". Surely no one in a placid mood

could have inflicted such a thing upon us!

More recent incidents of the intellectual stimulus of a bad temper are furnished in "Life With Father" by Clarence Day, and in "The Vanishing Virginian" by Rebecca Yancey Williams. One of the most amusing situations in "Life With Father" was when something would go wrong and Father would retire to his room and peremptorily tell God what should be done.

In "The Vanishing Virginian", Captain Yancey would explode on the slightest provocation. On one occasion when his laundry was not delivered this characteristic was brought out. The laundry had been done at his farm in Bedford and was sent to his home in Lynchburg by express collect, but because neither Captain Yancey nor his wife was at home at the moment and the new employee was unacquainted with them the laundry was not left as it could not be paid for. When Captain Yancey returned and found his laundry had not been delivered he telephoned the express company and protested with many damns for the company and all its works and particularly for the "haggis-headed young idiot" who had such damn little sense as not to leave the package. In a loud voice he committed the whole express company and its entire personnel to everlasting and eternal damnation. His wife was very much perturbed. She called up the express company and apologized to the agent, who simply laughed and said he knew Captain Bob and it was all right. She then tried to explain to her new negro cook who could not help hearing the Captain, but the cook said, "Lawd, Miss Rose, I don't mind. I likes to work for quality folks; I knowed Mr. Yancey was a 'ristocrat de minute I heerd him cuss so pretty."

There are numerous case histories which illustrate the incidence of a bad temper and its defense reaction. Those of Carlyle, Samuel Johnson, Mr. Day and Captain Bob Yancey have been mentioned. In the surgical profession they may also be found. Dr. William H. Carmalt was a professor of surgery at Yale for many years. When he was about seventy he retired, but he lived to a more advanced age. His early training was in ophthalmology in Vienna, where he became much interested in the history of medicine, particularly as it affected surgery. He was fond of tracing back to the laws and customs of the Arabs and Moors. Another characteristic was

that he was impatient of questions regarding the source of his information. This would have cramped his style and probably have involved considerable labor and tedious references concerning things that he believed he knew full well. So a favorite expression of his when he was asked for his authority for a statement was that "It is none of your damn business". In spite of his occasional peevishness, however, he was very popular with the students and the profession.

A testimonial dinner was given him some years after he had retired. The toastmaster was Dr. David Lyman, of Connecticut, an alumnus of the University of Virginia. He addressed Dr. Carmalt (who was known as Uncle William) in the following verse:

"You are old, Uncle William, and some people say
That temper increases with age,
But we find you as mild as a soft summer day.
Pray, how do you conquer your rage?
The secret of that, Uncle William replied,
Was taught by the Arabs and Moors;
But where I obtained it, or how it's applied,
Isn't any damn business of yours!"

So, if we had to create an ideal man, we would follow this formula: As the primary ingredients take large quantities of physical and moral courage, honesty and truthfulness; add a considerable amount of intelligence, loyalty, physical comeliness and a rather liberal measure of gentleness and kindness, with some tactfulness. To prevent this combination, however, from being somewhat flat and insipid, it should be seasoned with a dash of bad temper.

Correspondence

Correction as to Presidents of American Psychiatric Association.

TO THE EDITOR:

The VIRGINIA MEDICAL MONTHLY is mistaken in its statement* that no previous president of the almost-a-century-old American Psychiatric Association was a Virginian.

In 1901-'02, Dr. Robert J. Preston (Bob's father) was president of the Association; in 1909-'10, Dr. W. F. Drewry was the Association's president. Dr. Preston was superintendent of the Southwestern State Hospital, at Marion, and Dr. Drewry, as you know, was superintendent of the Central State Hospital. In 1887-'88, Dr. Eugene Grissom was president of the Association. He was then superintendent of the State Hospital at Raleigh. I recall no other resident of North Carolina who has been president. Yet I must not forget that in 1906-'07 Dr. Charles G. Hill, of Baltimore, was president of the American Psychiatric Association. He was for many years the medical head of Mount Hope Retreat in Baltimore, a Catholic institution, though he was an Episcopalian. When the Association was in session in Richmond in 1925, he told me that he was born not many miles north of Raleigh, in Louisburg. He told me, too, bravely and almost cheerfully, that he would not be present at another meeting. Within a few months he was dead—a lovely old man he was, too. It may be that some other president was North Carolina-born, but I doubt it.

It is a coincidence that Fred Wharton Rankin, president-elect of the American Medical Association, and I were in high school together in Statesville, North Carolina. Fred is younger than I by ten or twelve years, perhaps, but he came into high school, a little fellow, just before I left it. We were both born in Iredell County, fifteen or twenty miles apart, in the country. He married a daughter of one of the Mayos. I seldom see Rankin, but I have the feeling that he has no objection to so-called socialized medicine. I am anxious to see what his attitude will be. He has lived at Lexington, Kentucky, for several years.

Faithfully,

J. K. HALL.

Richmond, Virginia,
June 9, 1941.

EDITOR'S NOTE.—Dr. Hall was recently elected president of the American Psychiatric Association for 1941-2.

*Appearing in May, 1941, issue.

Military and Naval Section

The following have been added to the list of

Examining Physicians on Local Boards

Dr. J. D. Woodley, Great Bridge.
 Dr. W. H. Saunders, Roanoke.
 Dr. George S. Hurt, Roanoke.
 Dr. H. M. Richardson, Midlothian.
 Dr. W. C. Williams, Hillsville.
 Dr. Wm. H. Hughes (Col.), Richmond.
 Dr. Henry Lee, Roanoke.
 Dr. Elam C. Toone, Jr., Richmond.
 Dr. Robley D. Bates, Jr., Richmond.
 Dr. Max Schoenbaum, Richmond.
 Dr. Paul W. Bowden, Charlotte C. H.
 Dr. W. P. Yancey (Col.), Roanoke.
 Dr. George A. Moore (Col.), Roanoke.
 Dr. M. H. Law (Col.), Roanoke.
 Dr. Sidney Gray Page, Jr., Richmond.
 Dr. I. M. Nuckols, Mount Sidney.
 Dr. J. Hansford Thomas, Jr., Greenville.
 Dr. A. M. Burfoot, Fentress.
 Dr. W. M. Otey, Roanoke.
 Dr. Vernon Harris (Col.), Richmond.
 Dr. J. E. Hamner, Petersburg.
 Dr. C. L. Mullen (Col.), Richmond.
 Dr. E. B. Kilby, Toano.
 Dr. A. M. Sneed, Toano.
 Dr. Joseph Coates, Galax.
 Dr. M. E. McRae, Chatham.
 Dr. B. F. Eckles, Galax.
 Dr. W. P. Davis, Galax.
 Dr. Chas. E. Llewellyn, Richmond.
 Dr. U. H. Johnson, Port Richmond.
 Dr. W. A. Franklin, West Point.
 Dr. C. C. Cooke (Col.), Richmond.
 Dr. H. L. Townsend, Marshall.
 Dr. H. C. Grant, Remington.
 Dr. V. L. McCullers, Remington.
 Dr. Wm. B. Greene (Col.), Petersburg.
 Dr. H. W. Williams (Col.), Petersburg.
 Dr. Kenneth Cooper, Lynchburg.
 Dr. J. Newton Dunn, Blackstone.
 Dr. E. Forrest Neal, Altavista.
 Dr. C. F. Ross, Criglersville.
 Dr. R. B. Newman, Hampton.
 Dr. J. A. Jackson (Col.), Norfolk.
 Dr. E. D. Burke (Col.), Norfolk.
 Dr. John F. McGavock, Charlottesville.
 Dr. G. Hamilton Francis (Col.), Norfolk.
 Dr. J. Q. A. Webb (Col.), Norfolk.
 Dr. J. T. Givens (Col.), Norfolk.
 Dr. W. P. Collette (Col.), Norfolk.
 Dr. C. R. S. Collins (Col.), Norfolk.
 Dr. A. C. Fentress (Col.), Norfolk.
 Dr. Frank R. Trigg (Col.), Norfolk.
 Dr. J. D. Jackson (Col.), Norfolk.

Dr. F. W. James (Col.), Norfolk.
 Dr. E. W. Murray (Col.), Norfolk.
 Dr. W. H. Malan, Dublin.
 Dr. A. M. Groseclose, Roanoke.
 Dr. H. B. Stone, Jr., Roanoke.
 Dr. M. H. Williams, Roanoke.
 Dr. G. G. Rhudy, Roanoke.
 Dr. J. L. Cabaniss, Roanoke.
 Dr. D. C. Keister, Osaka.
 Dr. Jerome Natt, Roanoke.
 Dr. N. A. Beeton, Vinton.
 Dr. T. C. Sutherland, Haysi.
 Dr. J. W. Johnson, Union Level.
 Dr. W. W. Pierce (Col.), Chase City.
 Dr. T. N. Davis, Lynchburg.
 Dr. Harvey C. Brownley, Lynchburg.
 Dr. John O. McNeel, University.
 Dr. Alfred Abramson, Alexandria.
 Dr. O. D. Durant, Alexandria.
 Dr. C. E. Jenkins, Alexandria.
 Dr. A. C. Lindo, Alexandria.
 Dr. Colin MacRae, Alexandria.
 Dr. J. A. Sims, Alexandria.
 Dr. W. C. West, Alexandria.
 Dr. C. F. West, Alexandria.
 Dr. L. M. Lisle, Alexandria.
 Dr. H. E. Cross, Alexandria.
 Dr. C. D. Barksdale, Sutherlin.
 Dr. C. B. White, Halifax.
 Dr. Louis P. Bailey, Nathalie.

Medical Reserve Officers

In addition to those previously reported through the MONTHLY, the following doctors have been ordered to extended active duty with the regular army by the commanding general of the Third Corps Area:

Lt. Col. H. E. Whaley, Victoria—Camp Lee.
 Capt. Raymond K. Butler, Madison—Camp Davis, N. C.
 Capt. Lawrence Paul Jones, Emporia—Camp Pendleton.
 Capt. D. H. Rosenfeld, Richmond—Camp Lee.
 Lt. William Otis Bailey, Jr., Leesburg—Ft. George G. Meade, Md.
 Lt. Manfred Call, III, Richmond—Ft. George G. Meade, Md.
 Lt. John Letcher Chestnut, Mountain Grove—Ft. George G. Meade, Md.
 Lt. David I. Farnsworth, Richmond—Ft. George G. Meade, Md.
 Lt. Joseph E. Gladstone, Exmore—Camp Lee.
 Lt. Michael I. Hanna, Covington—Ft. George G. Meade, Md.
 Lt. Frederick G. McConnell, Gate City—Camp Davis, N. C.
 Lt. Brooke B. Mallory, Lexington—Fort Belvoir.

- Lt. Edward Albert Mitchell, Clinchco—Ft. George G. Meade, Md.
 Lt. Nowell Darden Nelms, Mathews—Ft. George G. Meade, Md.
 Lt. Bernard Donald Packer, Richmond—Fort Belvoir.
 Lt. Willmer Howard Paine, Charlottesville—Fort Bragg, N. C.
 Lt. James McGuire Peery, North Tazewell—Ft. George G. Meade, Md.
 Lt. William Asa Seawell, Raven—Ft. George G. Meade, Md.
 Lt. Lewis Frank Somers, Lynchburg—Ft. George G. Meade, Md.
 Lt. Vernon A. Stehman, Arlington—Ft. George G. Meade, Md.
 Lt. W. Thomas Varner, Richmond—Ft. George G. Meade, Md.
 Lt. John Tabb Walke, Norfolk—Ft. George G. Meade, Md.
 Lt. Robert Barnes Ware, Lynchburg—Ft. George G. Meade, Md.
 Lt. O. M. Weaver, Colony—Ft. George G. Meade, Md.

Major Gilbert O. Crank, Lawton, W. Va., class '16, Medical College of Virginia—Army Headquarters, Camp Davis, N. C.

Capt. Edwin J. Palmer, Palmer, Mass., class of '34, Medical College of Virginia—Fort Devens, Mass., but to be attached to 13th Medical Regiment, Camp Forrest, Tenn.

Lt. Leo L. Tylec, Union City, Conn., class of '35, Medical College of Virginia—Station Hospital, Fort Devens, Mass.

Transfer

Capt. Guy C. Richardson, Bristol, has been transferred from Station Hospital, Ft. McClellan, Ala., to Randolph Field, Texas.

Promotions

Capt. Grant R. Elliott, Orange, has been promoted to Major, effective June 3, his assignment being Surgeon of the 17th Bombardment Wing, Savannah Air Base, Savannah, Ga.

Lt. Hugh B. Brown, Jr., Draper, who was first sent to Ft. George G. Meade with the National Guard, has been promoted to Captain.

Naval Medical Reserve

Lt. Charles H. Patterson, M.C.-V(s) U.S.N.R., Lynchburg—Dermatologist to the U. S. Naval Hospital, Philadelphia.

Miscellaneous

Remarks on the Occasion of the Unveiling of the Portrait of Dr. George Woodford Brown.*

One hundred and seventy-two years ago the first court of directors of the Eastern Lunatic Asylum

*At Eastern State Hospital, Williamsburg, Va., May 16, 1941.

took office. One hundred and sixty-eight years ago Dr. John deSequeira became its first visiting physician. It was not until July 1, 1841, that an Act of the Legislature establishing the office of medical superintendent became effective and Dr. John M. Galt became its first superintendent, simultaneously with Dr. Francis T. Stribling, who assumed a similar position at the Asylum in Staunton. These two men, with eleven other hospital superintendents from various parts of the United States, in 1844 organized what is now the American Psychiatric Association which is today the oldest national medical association in America. As pregnant as is the City of Williamsburg with history relating to the conception and birth of the nation, it is difficult for me to think of Williamsburg without the hospital, or to give the history of the latter less importance than that of the former. For here it was that a great charity, state care of the mentally ill, first became a reality and the example was set which led to its adoption eventually by every state in the Union. From the standpoint of the psychiatrist, the history of the Eastern State Hospital is almost sacred history.

To be the successor to some of the illustrious superintendents who have guided the destinies of this institution through the years is an honor. Dr. Galt, probably the most distinguished of the line, was superintendent for a little less than twenty-one years. His ten successors; Wagner, Henley, Garrett, Petticolas, Brower, Black, Wise, Moncure, Foster, and Brunk, served a total of forty-nine years, or an average of a little less than five years each.

Dr. Brown came to the institution March 14, 1911, something over thirty years ago. His period of service, therefore, far exceeds that of any one of his predecessors. This in itself is a distinction. The year 1941 is appropriate for this presentation and celebration, as it marks the one hundredth anniversary of the institution under a medical superintendency, nearly a third of which period Dr. Brown has served.

Other than to mention the plans for the development of the plant at Dunbar which, it is contemplated, will be the last word in hospital construction, I shall not attempt to go into any details regarding the growth of the institution and the improvements which have been made during Dr. Brown's incumbency. Rather would I speak of my personal friendship and affection and the admiration

which so many of us have for him. In the more than thirty years of my acquaintance with him, I have seen him under varied conditions and circumstances—in adversity and otherwise. Through it all there stands out the picture of a wise and skillful physician, a man gentlemanly and inately kind, one whose integrity has never been questioned, honest with himself and others, unmoved by criticism, almost painfully independent, and with it all modest to a fault.

Because of his modesty, no doubt many of his splendid accomplishments are unrecorded for the enlightenment of future readers of hospital history. But for his independence and magnificent disregard for public opinion, his pathway would doubtless often have been smoother.

Some of us might imagine that if it were possible to make him over, he might be improved. I wonder! Of this I am sure, the product of our creation, if attempted, would not be Dr. Brown; and it is Dr. Brown as he *is* that his friends honor today.

Dr. Brown, it is not because you are connected with the most historical institution for the mentally ill in America; it is not because for nearly a third of a century you have been its Guiding Star; it is not because you succeeded distinguished hospital superintendents; nor is it even because you are a wise physician and a kindly gentleman that your friends seek to honor you today. It is, I think, because of something which is infinitely more important and lasting. It is because of the love which your friends have for you that this occasion has arisen. It may be that your faults as well as your virtues are important in the make-up of that personality which endears you to your friends. I can think of no sweeter motive for their action today than love—and love is no idle word. I give you no less authority than that of the sometimes impetuous but always the learned scholar, the apostle to the Gentiles, who has recorded in Holy Writ his estimate of love as a motivating and enduring thing. He tells us that prophecies shall fail, tongues shall cease, and knowledge shall vanish away; but love never faileth. "And now abideth faith, hope, love, these three; but the greatest of these is love."

Dr. Brown, your friends in having the artist capture and transmit to canvas this splendid symbol or likeness of you have done a most fitting thing and paid you a most merited tribute. Those for whom I

am privileged to speak and I salute you and we wish for you many years of health and happiness.

H. C. HENRY, M. D.,
Director of State Hospitals.

A Proposed Course in Audiometry.

The terms used herein are those used by Mr. Ralph Crutchett in his proposed audiometry law, published in the *Volta Review* for June, 1941, namely:

audiometry: The measurement of the powers or range of human hearing and the prescribing, fitting, or selling of hearing aids

audiometrist: One who is skilled in and practices audiometry.

Neither of the above words is defined in Webster's New International Dictionary, but Mr. Crutchett's definitions are logically comparable to those given for the words *optometry* and *optometrist*.

Mr. Crutchett, in proposing an audiometry law, gave due recognition to the fact that at present no centers exist where training in audiometry is offered; therefore his law provides only for an examination for prospective audiometrists, the contents of such examination being left to the discretion of the examining board. It is probable that no initial step could go farther than that at present. It is important, however, that some sort of standard be set for examinations of this kind, and that plans be made for the early establishment of training courses in audiometry.

Discussion of this subject in the two offices at the Volta Bureau and among friends in the otological profession and hearing aid business has brought out some suggestions as to what a course in audiometry should include. These are offered here, in the same spirit in which Mr. Crutchett offered his proposed law—not as a finished product, but as a basis for further discussion from which it is hoped that action will arise.

SUGGESTIONS FOR COURSE

The course should be not less than two school years in length.

The subjects should include:

Physics, two years, one of which should be devoted to the physics of sound.

Fundamentals of communication engineering.

Fundamentals of vacuum tube amplification.

Theory and practice in the technique of audiometer testing and the making of audiograms.

Psychology—especially of the handicapped; ethics; salesmanship.

Mechanism of hearing.

Training of residual hearing.

Lip reading—history, psychological value, fundamentals. Required reading from publications of the Volta Bureau and of the American Society for the Hard of Hearing.

Mechanism of speech.

Phonetics—formation of the elements of English speech.

History and current literature dealing with development of audiometers and hearing aids. Required reading from *Volta Review*, A.S.H.H. Conference Proceedings, Laryngoscope, Archives of Otolaryngology, Annals of Otology, Journal of the Acoustical Society of America, etc.—(*Volta Review* of July, 1941).

Mental Hygiene Activities

On the 14th of May there was held in Norfolk a meeting of the Mental Hygiene Society of Virginia under the leadership of its president, Dr. David C. Wilson, and sponsored by the Junior League of Norfolk, whose chairman, Mrs. Mackenzie Jenkins, was chiefly responsible for the local arrangements. The general topic was "Mental Hygiene and the Emergency" and the afternoon session was devoted to Parole, Recreation and Vocational Training. The night meeting was along somewhat more technical lines and the discussants were Drs. Henry, Gayle, Williams and Pettis. Both sessions were largely attended and there was much interest shown as evidenced by the questions asked.

I was requested to write a short article on Mental Hygiene Activities in Virginia but as I write I am tempted to say more about the Mental Hygiene needs of our state and especially of my own community. What is Mental Hygiene and by what means can some of its clinical applications be realized? Great strides have been made in medicine in the prevention of disease but prior to the past few years little had been accomplished in the prevention of mental disorders. So Mental Hygiene is concerned with helping the individual to keep emotionally well, to help him in his adaptation to life so that he may lead a

useful and happy existence. It must be important or the U. S. Public Health Service would not have a division of Mental Hygiene. It is not so much concerned with the "end of the road" Psychotic who has already spent years of his life in an Institution for Mental Disease but it is greatly concerned in preventing the development of that Psychosis.

What can be done about it? A few years ago syphilis was a word not to be uttered in polite society but only in medical groups; by educating the public it is now a good word in any group. And so the public as well as the physician will have to be educated in the field of Mental Hygiene. This is the chief reason this year for the Mental Hygiene meetings which have been held in several of the cities of the state. The best time to practice Mental Hygiene is in early childhood and the best investment that a state or community can make is to allocate funds for an adequately staffed Child's Guidance and Mental Hygiene Clinic where trained workers will be able to study behavior problems in children and give Psychiatric service to the many hundreds of adults who are otherwise floundering and groping around in the dark not knowing which way to turn. Such clinics will not be one hundred per cent nor will they ever be ideal but it is estimated that if seven cases a year can be successfully handled so that their admission to a state hospital can be prevented, more will be saved in dollars than the cost of maintaining the clinic. In the words of Dr. Vogel of the Public Health Service, the question is not, "Can we afford mental hygiene?" but, "Can we afford to be without mental hygiene?"

FRANK H. REDWOOD.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for May, 1941, compared with the same month in 1940 and for the period of January through May, 1941, compared with the same period in 1940 follows:

	May 1941	May 1940	Jan.- May 1941	Jan.- May 1940
Typhoid and Paratyphoid Fever	17	13	59	52
Diarrhea and Dysentery	50	62	276	351
Measles	6,585	962	29,778	2,128

Scarlet Fever	104	148	836	901
Diphtheria	35	29	185	263
Poliomyelitis	1	0	11	6
Meningitis	13	14	58	38
Undulant Fever	3	3	6	7
Rocky Mountain Spotted Fever	3	0	7	3
Tularemia	3	1	18	25

THE X-RAY IN TUBERCULOSIS SURVEYS

For some time workers in the field of tuberculosis control have felt the need of a rapid, inexpensive method for x-raying large groups of individuals. For the past few years paper films have been used for this purpose and have proven satisfactory. Five or six hundred patients may be examined daily by this method at a cost of seventy-five cents each. This type of examination has been used extensively in public schools, colleges, industrial plants, and mental hospitals. The rates in these groups vary from less than one-tenth of one per cent in elementary schools, to five per cent or more in hospitals for the insane. In all groups many unsuspected cases of tuberculosis were discovered that had not been previously suspected.

Examination of employees in industrial plants is especially important at the present time for obvious reasons. While it is well known that tuberculosis is no respecter of persons, the toll is heaviest in the underprivileged; in some instances this means our industrial workers.

Ingenious physicists have perfected a method of x-ray examination called fluorography that promises to fulfill all needs for a rapid, inexpensive method of mass survey. This procedure, suggested in 1911 by Caldwell, involves photography in miniature with an ordinary camera of the roentgen ray shadow on a fluoroscopic screen. Developed first on a practical basis in South America by Dr. Abren and perfected in this country and on the continent by numerous manufacturers and investigators, it now takes its place as the outstanding development in the x-ray field. Undoubtedly it is destined to play a large part in locating the unsuspected case of tuberculosis and the insidious industrial disease.

A portable machine using the 35mm roll film is now in use by the State Department of Health. Approximately 500 individuals can be examined daily at a cost which is not expected to exceed twenty-five cents per case. This unit with a total weight of 750 pounds is transported in a light delivery truck from place to place. Unassembled, the heaviest piece

weighs but two hundred pounds. A Leica Model F. camera with f 1.5 lens is mounted at the small end of a light-proof truncated cone. At the other end is the fluorescent screen. This screen is especially designed for this type of work and differs from the usual ones by being greenish yellow in color. The patient is placed against the largest end of cone and screen energized. The image produced on the fluoroscope screen is registered on the small film. These, in rolls of 250 exposures, are developed by the usual technique. On the developed film, gross lesions can be identified. However, the films must be enlarged either by magnification or projection for detailed reading. The State Department of Health prefers the projector, as the reduced films are easier to read than the conventional 14-inch by 17-inch since the entire chest field can be visualized at one time.

In mass surveys where little or no clinical information is available, conservatism must be exercised in making final and absolute diagnosis. None of these methods are as accurate as the regulation 14-inch by 17-inch stereoscopic film; all other methods, including history, physical examination and various laboratory procedures, must be fully utilized in making the final diagnosis. Undoubtedly, this method makes x-ray of chests available to a large group of our people who otherwise would not have x-rays made.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN W. HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

My First A.M.A. Auxiliary Meeting.

To some people the Cleveland meeting of the American Medical Association was just another trip but to me it was my first opportunity to attend the Woman's Auxiliary to the A. M. A. and one of those most thrilling experiences of my life. To be a part of such a convention was a rare privilege, and

to carry Virginia's flag in the Parade of States was an honor of which I am justly proud. Of the thirty-nine states organized, thirty-seven were represented either by the presidents or delegates and the remaining two were represented by visitors from those states.

Thirty-four states sent exhibits and Virginia's was one of the most interesting and attractive. In the two minutes allowed me on the program I was happy indeed to give Mrs. Holland's report which was very fine, but, in the conference on organization, my "face was red" when we had not organized even one auxiliary. Some states are asking the women to become members-at-large to help carry out the plan for the year of "EVERY ELIGIBLE DOCTOR'S WIFE A MEMBER OF THE WOMAN'S AUXILIARY". This is a privilege which is yours by virtue of your husband's accomplishments and I personally would like to see all eligible women enjoy it.

Dr. Van Etten, president of the American Medical Association, in his address to us gave just praise to the achievements of the Auxiliary, and Dr. Frank H. Lahey, in-coming president, said there is much we can do. He says that being only nineteen years old makes us a comparatively new but powerful organization. If we will study the platform of the American Medical Association—Nutrition, First Aid and Public Relations—and help interpret and evaluate their meaning to those we contact in other groups, we will greatly aid our parent organization—the American Medical Association. It was also suggested that we help in every way we can the families of physicians who are moving in and near the army camps.

The Auxiliary in Ohio is only one year old and has 1,600 members. So closely associated are they with their Medical Association, that they worked together—800 strong—for the plans and preparation for the convention.

The social part of the program was all that could be hoped for and more. It helped greatly to recreate us for the many things we were to hear and learn. Since we do what we know, it was important for us to have knowledge linger and thereby give us understanding.

The resolutions and election results will be carried in the *Bulletin of the Woman's Auxiliary of the American Medical Association*, which I recommend to your reading.

Health is the greatest consideration in our nation

today. Our doctors are the guardians of this health and we women must do all we can to be helpful guardians of THE guardians.

(MRS. E. LATANÉ) LOUISE W. FLANAGAN,
Virginia Delegate.

The Williamsburg-James City County Auxiliary

Met May the 13th at the home of Mrs. J. R. Tucker in Williamsburg. The Auxiliary was hostess to the wives of the physicians who are stationed at nearby military posts and the attendance was unusually good.

The date for the meetings was changed from the second to the first Tuesdays.

Dr. W. W. Fuller gave a very interesting and educational talk on the "History of Venereal Diseases".

Mrs. Tucker, chairman of the Red Cross division of the Auxiliary, made a report on work being done and asked all members to take some sewing home.

(MRS. C. E.) MARION HOLDERBY,
President.

Truth About Medicine

The following products have been accepted by the Council on Pharmacy and Chemistry since May 1, 1941: Lederle Laboratories.

Tablets Aminophyllin—Lederle, 0.2 Gm. (3 grains).
Eli Lilly & Company.

Sulfathiazole—Lilly.

Tablets Sulfathiazole—Lilly, 0.25 Gm. (3¼ grains).

Tablets Sulfathiazole—Lilly, 0.5 Gm. (7½ grains).

Upjohn Company.

Typhoid Vaccine—Upjohn, six 2½ cc. vials package.

Tablets Sulfapyridine—Upjohn, 0.5 Gm. (7.7 grains).

Tablets Sulfathiazole—Upjohn, 0.5 Gm. (7.7 grains).

Winthrop Chemical Co., Inc.

Pontocaine Base Eye Ointment.

New and Nonofficial Remedies

The following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Typhoid Paratyphoid Mixed Vaccine (New and Nonofficial Remedies, 1940, p. 466).—Also marketed in packages of six 2½ cc. vials containing in each cubic centimeter 1,000 million killed-typhoid bacilli, 750 million each of killed paratyphoid A and paratyphoid B bacilli. The Upjohn Company, Kalamazoo, Mich.

Solution Liver Extract—Lilly.—A sterile aqueous solution containing the nitrogenous nonprotein fraction G of Cohn *et al.* preserved with 0.5 per cent phenol. The

potency of the preparation is such that its daily parenteral administration has been found to produce the standard reticulocyte response defined for each U.S.P. unit (injectable) present. Solution liver extract—Lilly is proposed for intramuscular injection in the treatment of pernicious anemia. In the average uncomplicated case of pernicious anemia in relapse a satisfactory response may be obtained with an initial dose of 5 to 20 U.S.P. units daily for the first two or three days, after which weekly injections of 7 to 15 U.S.P. units should be continued until the blood picture has returned to normal. For maintenance a minimum of 1 U.S.P. unit (injectable) daily is usually sufficient and may be given as a cumulative dose. The product is supplied in rubber stoppered ampules, 3.5 cc. (containing 2 U.S.P. units per cc.), 10 cc. (containing 2 U.S.P. units per cc.), and 10 cc. (containing 1 U.S.P. unit per cc.). Eli Lilly & Co., Indianapolis. (*J.A.M.A.*, May 31, 1941, p. 2505.)

Book Announcements

Foreign Bodies Left in the Abdomen. The Surgical Problems—Cases, Treatment, Prevention. The Legal Problems—Cases, Decisions, Responsibilities. By HARRY STURGEON CROSSEN, M.D., School of Medicine, Washington University. And DAVID FREDERIC CROSSEN, LL.B., School of Law, Washington University, St. Louis. St. Louis. The C. V. Mosby Company. 1940. Octavo of 762 pages. With 212 illustrations including 4 color plates. Cloth. Price, \$10.00.

The medical and legal aspects of foreign bodies that find their way into or are left accidentally in the abdominal cavity and the body orifices are discussed in this book.

In the beginning of the medical preface, H. S. Crossen states, "This work is undertaken to emphasize to surgeons the danger of occurrence of the serious accident of leaving a foreign body in the abdominal cavity, to work out the best plan of treatment for the various types of such cases, to call attention to the difficulties of avoiding such accidents under the many stresses of abdominal work, and to arouse interest in the serious study of the problem of prevention." D. F. Crossen writes, in part, in the legal preface, "The subject of foreign bodies left in the abdomen considered from the legal standpoint, presents two main problems or aspects. One has to do with the present law and rulings in the matter and entails a presentation of the general practice and decisions and also of the special points raised by particular laws in the various states. The other main aspect of the subject has to do with the question of equitable division of responsibility in the complex

relations of the operating room and entails a careful and detailed inquiry into the necessary division of responsible work, and hence of responsibility among the various participants in the serious understanding which is titled operation, that justice may be done to all."

Both phases of this subject are covered in detail. The chapters devoted to the legal aspects are, I am afraid, more concise than those written by our surgical colleague. This may have been due to the nature of the respective tasks but the reviewer feels that the subject of sponges in the abdominal cavity could have been covered in less than 245 pages. The author's ingenious method of preventing this accident is described at length.

The chapter on swallowed articles in the abdomen and especially that part devoted to the treatment of this condition is of particular interest, for few surgeons see many cases of this nature. The chapter on deception and malingering is also of more than passing interest. Despite its limited field this book represents an enormous amount of work, the references alone number more than one thousand.

Each case that is cited emphasizes the fact that foreign bodies left in the abdominal cavity hold nothing but grief for patient and surgeon alike. While it is unnecessary to read each page, this book should be on the must list of every surgeon and operating room superintendent.

HARRY J. WARTHEN, M.D.

MacLeod's Physiology in Modern Medicine. Edited by PHILIP BARD, Professor of Physiology, Johns Hopkins University School of Medicine, and Collaborators (see page 300, May 1941, Va. Med. Mo.) Ninth Edition. St. Louis. The C. V. Mosby Company. 1941 Octavo of xxvi-1256 pages. Illustrated. Cloth. Price \$10.00.

This new edition of this text is a definite improvement over the previous edition. In spite of the fact that much of the previous amount of biochemistry it contained has been omitted, the book has become a rather weighty tome. It is undoubtedly, in the reviewer's opinion, one of the two best physiology texts for medical students and practitioners.

Since it is always the custom for a reviewer to pick flaws in a reviewed volume, I will not break with tradition, although I often have wondered whether this is done to impress the reader with the reviewer's superior knowledge, or merely to supply constructive criticism to the author so that the next edition may be improved.

I regret that the subject of ion antagonism has been omitted from this edition for biochemists, probably for traditional reasons, usually pay it scant attention. In the discussion of the adrenal cortical hormone, apparently no mention whatsoever is made of the important compound desoxycorticosterone, although this is being widely used clinically. The method of obtaining alveolar CO₂ samples given is no longer used by present-day investigators, since the expiratory sample alone has been proven to give most accurate results. The titer of gonadotropin in the urine during pregnancy (page 1050) is much too low, and the peak is generally assumed to occur in the second or third month rather than the fifth, as stated. Mention should be made of the difference between pituitary gonadotropin and chorionic gonadotropin. Nothing is said of the fact that the placenta secretes progesterone. The reviewer would prefer to see structural formulae of other hormones in addition to that of thyroxine.

Although at the present day it is necessary and highly advisable to have various chapters written by specialists, it would be of great advantage if these chapters were completely rewritten by the editor, in order to maintain the same general style and viewpoint throughout the text.

In spite of these minor criticisms I consider this an excellent text and one well adapted as a reference book for the practitioner to whom physiology is yearly becoming more important.

R. J. MAIN.

Clinical Pellagra. By SEALE HARRIS, M.D., Professor Emeritus of Medicine, University of Alabama. Assisted by SEALE HARRIS, JR., M.D., Formerly Assistant Professor of Medicine, Vanderbilt University. With Foreword by E. V. McCollum, Ph.D., Sc.D., LL.D., St. Louis. The C. V. Mosby Company. 1941. Octavo of 494 pages. Cloth. Price, \$7.00.

In this work Dr. Harris was assisted by his son, Dr. Seale Harris, Jr., and the work is in collaboration with Drs. Julian M. Ruffin, David T. Smith, V. P. W. Sydenstricker, Katharine Dodd, William B. Porter, Upshur Higgenbotham, Don C. Sutton, John Ashworth, and William D. Partlow. There is a foreword by E. V. McCollum. Thus this book comes to be a composite representation of ideas on

clinical pellagra chiefly by various Southern medical minds.

But the book is more than a composite picture, for Seale Harris himself, in spite of the imposing list of collaborators, has written about two-thirds of the book.

Pellagra is not a new disease. It has been described in Spain and Italy for several hundred years and was studied in France, Egypt, Austria, Mexico, and Central America, and sporadic cases were observed in various countries long before it made its appearance in the Southern United States the early part of this century, where it was first discovered in quantity and described by Dr. George Searcy of Alabama, in 1906. Thank heavens Dr. Harris gives full credit to Dr. Searcy—something that has not been done by many so-called pellagra students! Harris also gives Goldberger full credit for his contribution in pellagra prevention factors.

Harris has been exceedingly unprejudiced and tolerant in his presentation of the various theories of pellagra causation and in this, as in other instances, he has shown not only sagacity but wisdom, for the full story of the etiology of pellagra has never been told although much has been written upon the subject. Partlow's views as expressed in Chapter IX are to this reviewer's mind very impressive, for the reviewer has felt for years that there was an infection factor, probably a virus, which was the Madam X in pellagra etiology.

The chapters of the collaborators are earnest and interesting and blend into the scheme of the book as a whole. The bibliography is extensive and the illustrations and tables are well selected and instructive. Dr. Seale Harris, himself, with his long teaching and clinical career, with his exact knowledge of gastrointestinal and metabolic disorders, and with his facile pen and glowing though orderly mind has told all the story of pellagra that is known to date. Still, he has left the gate ajar for further research. Every practitioner of medicine should have this book on clinical pellagra available, and every physician interested in pellagra, especially those in the Southern United States, should read it carefully.

BEVERLEY R. TUCKER, M.D.

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Editorial

A Heroine Resurrected.

As a biography *Edith Cavell* by Helen Judson (The Macmillan Company, \$2.50) might not receive editorial comment in a medical journal, but as a statement of the ideals of the nursing profession it possesses significance for the doctor as well as for the general public.

Presenting too little of that intimate detail of daily speech and behavior that makes a person come alive though dead for years, the book fails to achieve a three dimensional portrait of its subject. Miss Cavell remains to the end somewhat "shadow like and dry", though her early life spent with a puritanical father and gentle mother in the "shadow of duty" and in the "shadow of the church" carries conviction for the child psychologist, amateur and professional; but the very lack of humanizing and irrelevant material in the book, and the very reiteration with which the author presents the crystal clear virtues of this nurse, whose work in introducing the scientific type of hospital and private duty nursing to Belgium in 1907 should make her memorable without her tragic death, serve to endow her with an heroic quality that may make her a more real standard bearer for the profession than the now distant figure of Florence Nightingale.

The author sees Edith Cavell as a person with

an overwhelming desire to do something for people "most of them so helpless, so hurt and so unhappy"; a person who never admitted defeat in the face of unsurmountable obstacles; who told the truth to the letter; who governed by manner rather than by word; who was energetic and adaptable, of driving purpose and amazing industry, thoughtful, considerate, of a quiet dignity and reserved aloofness that suggested hidden resources within. Her two faults, a lack of imagination and a lack of humor are not unexpected in view of her ability to work steadily, unremittingly and with fanatic zeal.

No one wishes for our nurses a return to the salary of \$180.00 a year, with twelve-hour duty (one-half day off a week, a full day off a month, and a month's vacation), which was the lot of the Belgian nurses of Miss Cavell's creation, but one wishes for them, as for all persons having to do with the needs of humanity, Miss Cavell's conviction that theirs must be more than a mere profession, that it must be love-inspired as well as technically efficient.

One hopes the American nurses training schools will be spared the horrors that doubled and redoubled their opportunity to grow and serve in Belgium in 1914, but one wishes to call their attention to this book's testimony that a good pattern

of hospital and training school and matron can be carried unchanged into entirely different conditions by a thoroughly indoctrinated pupil whose character is firm enough to make up for any lack of genius. "Education . . . is a painful, continual difficult work to be done by kindness, by watching, by warning, by precept, and by praise, but above all—by example."

To every reader in these dark days so pitifully repeating all the terror and courage of the last war, there is timely patriotism in Miss Judson's book. George Eliot's stern promise that "the reward of one duty is the power to fulfill another"; Frank Crane's pronouncement that "your sole contribution to the sum of things is yourself"; Dr. Holmes' fine words that "Only when you have worked alone, when you have felt around you a black gulf of solitude more isolating than that which surrounds the dying man, and in hope and despair have trusted to your own unshaken will—then only will you have achieved"; and Miss Cavell's last words: "I know now patriotism is not enough; I must have no bitterness toward any one", are the kinds of quotations Americans need to feed on just now. It is to be noted that Miss Cavell said "Patriotism is not enough". She did not say "Patriotism is nothing". She loved humanity, therefore she loved her country, and she quietly laid down her life for it.

One feels at the end of this book that it is high time the discussion stopped as to the Germans' right, or lack of right, to shoot this woman. She herself knew that "you can't civilize the military" and that "the law is silent during war" when she assisted English and Belgian refugees to escape the German authorities by harboring them in her hospital and aiding them on their perilous way across the lines. She knew her danger. She was willing to accept the penalty. It is time we turned our attention to her heroism in dying her death, and to her devotion to duty in living her life.

The Healthier Profession.

Chance access to the ages of the fifty-six ministers of the Presbyterian Church in the United States who died in the last year disclosed that the average age of death among them was 70.5, and that the median age was 72. Impressed with this longevity, we were inspired to turn to the records of deaths among physicians printed weekly in *The Journal of the American Medical Association*. It was calculated

from 500 deaths there recorded that the average age of physicians dying in the United States in 1940 was 63.1 and that the median age was 66. These figures would seem to indicate that the young man who will be content with three score years in this vale of tears may go into medicine, but that the young man who wishes by reason of strength to achieve three score years and ten has a better chance for it in the ministry.

Sunburn.

At a time when many persons are subjecting themselves to sunburn accidentally or purposefully, a warning issued by the United States Public Health Service is timely. Physicians occasionally see serious cases of acute sunburn and there are instances on record in which sunburn has proved fatal. Year after year vacationists go to the seashore, and, stripped of most of their clothes, expose themselves to the tanning rays of the sun. If they acquire their tan gradually with the use of protective oils a deep pigmentation often follows. It is against this severe, chronic sunburn incurred season after season that the Public Health Service cautions. Ultraviolet radiation is capable of producing skin cancer in animals. Outdoor workers, such as farmers and sailors, are frequent victims of skin cancer, especially on the exposed parts of the body. Blondes are more susceptible than brunettes. Negroes are rarely affected. Judicious exposure to the sun is beneficial, but it needs to be stated again and again that severe sunburns, either acute or chronic, carry hazards all the more real because they are not generally appreciated.

Books About Doctors.

The Readers Digest has recently published a list of popular books relating to the medical profession in which the public has for the last few years shown a curiosity almost morbid. The list is worth passing on. It will serve a number of useful purposes. You may wish to recommend or give one of these books to a friend; you may be asked by a prospective medical student for informative or inspirational literature; you may wish to put one or all of these books in your own library. Here they are!

The Life of Pasteur by René Vallery-Radot (Doubleday, Doran).

Men Against Death by Paul de Kruif (Harcourt, Brace).

Microbe Hunters by Paul de Kruif (Harcourt, Brace).

The Little Doc by Frazier Hunt (Simon & Schuster).

- The Beloved Physician* by Robert MacNair Wilson (Macmillan).
- Madame Curie* by Eve Curie (Doubleday, Doran).
- Doctors on Horseback* by James T. Flexner (Viking).
- Life of Edward Jenner* by Frederic G. D. Drewitt (Longmans).
- American Doctor's Odyssey* by Victor Heiser (Norton).
- Forty Years For Labrador* by Sir Wilfred Grenfell (Houghton Mifflin).
- Short Life of Florence Nightingale* by Sir Edward T. Cook (Macmillan).
- Born That Way* by Earl Reinhold Carlson (John Day).
- The Horse and Buggy Doctor* by Arthur E. Hertsler (Harper).
- Relief of Pain* by René Fülöp-Miller (Bobbs-Merrill).
- As I Remember Him* by Hans Zinsser (Little, Brown).
- The Great Physician* by Edith G. Reid (Oxford University Press).
- Life of Mendel* by Hugo Iltis (Norton).
- William Crawford Gorgas* by Marie D. Gorgas and Burton J. Hendrick (Doubleday, Doran).
- The Doctor in History* by H. W. Haggard (Yale University Press).
- Behind The Doctor* by Logan Clendening (Knopf).
- The Story of Surgery* by Harvey Graham (Doubleday, Doran).
- Devils, Drugs and Doctors* by H. W. Haggard (Harper).
- The Lame, The Halt and The Blind* by H. W. Haggard (Blue Ribbon).
- Disease and Destiny* by Ralph Hermon Major (Appleton-Century).
- Rats, Lice and History* by Hans Zinsser (Blue Ribbon).
- The Great Doctors* by Henry E. Sigerist (Norton).
- Medical Magic* by David Dietz (Dodd, Mead).
- Advancing Fronts of Science* by George Gray (McGraw, Hill).
- Research, The Pathfinder of Science and Industry* by T. A. Boyd (Appleton-Century).
- Medicine and Mankind* by Iago Galdston (Appleton-Century).
- Magic in a Bottle* by Milton Silverman (Macmillan).
- The Human Body* by Logan Clendening (Knopf).
- The Science of Life* by H. G. Wells, J. S. Huxley and G. P. Wells (Doubleday, Doran).
- Biography of the Unborn* by Margaret Shea Gilbert (Williams & Wilkins).
- Unresting Cells* by R. W. Gerard (Harper).
- The Wisdom of The Body* by Walter B. Cannon (Norton).
- What It Means To Be A Doctor* by Dwight Anderson (Medical Society of the State of New York).
- The Medical Career* by Harvey Cushing (Little, Brown).
- Do You Want to Become A Doctor?* by Morris Fishbein (Stokes).
- Medical Occupations Available to Boys When They Grow Up* by L. M. Klinefelter (Dutton).
- Medical Occupations For Girls: Women in White* by L. M. Klinefelter (Dutton).
- The Young Man and Medicine* by L. F. Parker (Macmillan).

Presidents Message

Group Medical Examinations of Selectees.

The medical examinations of men coming under the Selective Service Act has now been going on for several months. We have acquired considerable information and are now in a position to draw certain conclusions. It was reasonable to expect that in the early days of these examinations there would be a considerable amount of confusion, due to a lack of understanding of the various regulations covering these examinations. I feel, however, that physicians in this state have a reason to be proud of their record. The average percentage of rejections at the two Induction Stations in Virginia—Richmond and Roanoke—has been 15.69, while in the other Induction Stations in the Third Corps Area the percentages have been 25.37, 22.97, 21.94, 17.26, 16.07, and 15.43, respectively.

I believe that with proper organization the number of men accepted by the local examiners and later rejected by the Induction Stations can be greatly re-

duced. That such a result is desirable, can scarcely be questioned. These men who are sent to the Induction Stations and later rejected are often seriously inconvenienced by reason of the fact that they have severed their civilian connections only to be returned to civilian life. This may be embarrassing not only to these men but also to their local examining physicians. The whole procedure is also a matter of considerable expense to the Government.

Experience has been had in certain areas in this state with group examinations of these men. A number of local boards have been combined and one examining team organized. A central point has been selected, with a properly equipped station, where examinations are conducted at stated times for the selectees from all of the boards in the group. This plan has served to provide better facilities, clerical help, and adequate laboratory service. As a result, the physicians' time has been conserved and on the whole more satisfactory examinations have been ob-

tained. In one of these group areas that has been operating for several months the percentage of rejections by the Induction Board has been only 10.49, as compared to an average of 15.69 for the entire state.

It is suggested that this group plan be adopted throughout the state, and that, by a combination of five or more local boards, examining groups be set up at convenient central points. These examining units could be provided with suitable quarters and with adequate equipment for carrying on their work. It is also suggested that as far as possible the burden of carrying on this work be distributed evenly throughout our profession; that is, the groups should be large enough to include all, or nearly all, of the

available men in a given area. In the near future it is hoped that there will be put before the physicians of this State a definite plan for carrying this idea into effect. I hope that all of the physicians throughout the State will give careful consideration to the plan.

Those physicians who have been serving on the Selective Service Boards have labored well. They have given generously of their time. There are many others who so far have not been called upon. Since no one can see the end of the present emergency, it would seem wise to set up a more efficient organization and more satisfactorily equalize the labor entailed.

WALTER B. MARTIN.

Proceedings of Societies

Danville-Pittsylvania Academy of Medicine.

Officers of the Academy, elected at its annual meeting are: President, Dr. Charles W. Purcell; vice-presidents, Drs. Snowden C. Hall and Walter McMann; and secretary-treasurer, Dr. Prentice Kinser, Jr., all of Danville.

The Dickenson-Buchanan County Medical Society

Held its first meeting for 1941 in the hospital, at Grundy, on May 21st, with twelve members present. Trachoma was the subject selected and was discussed by practically all doctors present. Dr. Pantera of the Mattie Williams Hospital, Richlands, presented a case and the discussion following disclosed the fact that there are a number of cases in Buchanan County. Delegates and alternates were named at this time to the Virginia Beach meeting of the State Society. Dr. J. C. Moore of Keen Mountain and Dr. T. C. Sutherland of Haysi are president and secretary, respectively.

It was decided to hold the next meeting in Grundy on June the 18th, at which time would be held the annual election of officers.

The Fourth District and Southside Virginia Medical Society

Held its annual meeting in Blackstone on the afternoon of May the 20th, under the presidency of Dr. W. M. Phipps of Hopewell. The following papers were presented:

Foods Which Disagree and Are Disliked During

the First Year of Life—Dr. W. Ambrose McGee, Richmond.

Acute Intussusception with Review of Twenty-One Cases—Dr. Edwin L. Kendig, Jr., Richmond.

What Every Physician Should Know About Stomach Trouble—Dr. Guy W. Horsley, Richmond.

The Prevention of Tetanus by Active Immunization—Dr. Wilbur M. Bowman, Petersburg.

Placenta Previa—Dr. Edgar W. Young, Petersburg.

Case Report—Dr. J. Bolling Jones, Petersburg.

At the business session, Dr. Stanley H. Macht of Crewe was elected to membership, and a resolution was passed providing for associate membership for doctors residing out of the territory of the Society. Election of officers was held and resulted in naming the following for the coming year: President, Dr. J. B. Kiser, Emporia; vice-presidents, Drs. B. H. Knight, Surry, and T. S. Jennings, Waverly; recording secretary, Dr. Francis Taylor, Petersburg; corresponding secretary and treasurer, Dr. C. E. Martin, Emporia (re-elected); chairman of steering committee, Dr. Wright Clarkson, Petersburg. Dinner at the Nottoway Tavern followed the meeting.

The Society accepted an invitation to hold its next session at Central State Hospital, Petersburg, on August the 5th.

Norfolk County Medical Society.

At the annual meeting of this Society on the evening of June the 2nd, the following officers were

elected to take office October 1: President, Dr. M. S. Fitchett; president-elect, Dr. A. Brownley Hodges; vice-president, Dr. Mallory S. Andrews; secretary-treasurer, Dr. Lockburn B. Scott, all of Norfolk. This will make the twenty-second consecutive year of service for the Society on the part of Dr. Scott.

At this meeting, also, delegates and alternates were elected to represent the Society at the next meeting of the State Society at Virginia Beach in October.

Northern Neck Medical Association.

The spring meeting of the Association was held at Heathsville on May the 22nd, at which time Drs. James H. Smith, Douglas G. Chapman and W. L. Peple of Richmond presented papers. The physicians were guests of Dr. and W. B. Richardson for lunch just prior to the scientific session. Dr. P. E. Lilly of Kilmarnock is president and Dr. Lee S. Liggan of Irvington, secretary.

News Notes

1941 Meeting of the Medical Society of Virginia Virginia Beach, October 6, 7, 8

Plans are shaping up splendidly for the next meeting of the Society at Virginia Beach. While The Cavalier is to be headquarters, with all sessions held there, several other excellent hotels will be open in October. These, with rates, are listed in the May issue of the MONTHLY. It is suggested that reservations be made promptly. Interesting hobbies will be displayed by some members and there will also be excellent scientific and commercial exhibits. The program is being arranged to allow social pleasures as well. You should not miss this meeting.

Commencements of Virginia Medical Schools.

MEDICAL COLLEGE OF VIRGINIA

The 103rd session commencement exercises of the College were held May 31st through June 3rd, with the Student Body Dance being on the 31st. The Reverend Vincent C. Franks, D. D., Rector, Saint Paul's Episcopal Church, delivered the commencement sermon on the 1st. Alumni registration began on the 2nd and ended with the usual banquet that night. Dr. T. Dewey Davis of Richmond was elected president for the coming year, with Dr. Harry L. Claud of Washington, D. C., as first vice-president. Dr. Harvey B. Haag of Richmond will be treasurer.

A buffet luncheon was held on Tuesday for the Board of Visitors, Alumni, Faculty, and Senior Classes. The final exercises were held at the Mosque that night, the commencement address being delivered by Dr. Theodore Meyer Greene, McCosh Professor of Philosophy of Princeton University. The Honorary Degree of Doctor of Science was conferred

on William Newton Hodgkin, Member of the Council on Dental Education of the American Dental Association. Diplomas were awarded to 171 graduates: 74 in medicine; 34 in dentistry; 29 in pharmacy; and 34 in nursing. The annual reception and dance closed the program.

The following are graduates in medicine, with hospital appointments:

HOSPITAL DIVISION, MEDICAL COLLEGE OF VIRGINIA, RICHMOND—Drs. Frank Neville Buck, Jr., Portsmouth; William Etzler Daner, Paden City, W. Va.; Marina Diez-Rivas, Caguas, P. R.; John Thomas Gianoulis, High Point, N. C.; Julius Charles Hulcher, Richmond; Cary Frederick Irons, Jr., Rockbridge Baths; Malene Grant Irons, Rockbridge Baths; Donald Shonk Morris, Charleston, W. Va.; Lloyd Fick Moss, Fredericksburg; Thomas Paul O'Brien, Benwood, W. Va.; Carl Putnam Parker, Jr., Seaboard, N. C.; George Sterling Row, Bridgewater; and Robert Hay Taylor, Maplewood, N. J.

JOHNSTON-WILLIS HOSPITAL, RICHMOND—Drs. Thomas Felix Coates, Jr., Tazewell; and William Russell Jones, Jr., Richmond.

STUART CIRCLE HOSPITAL—RICHMOND—Dr. John Edgar Stevens, Jr., Richmond.

UNIVERSITY OF VIRGINIA HOSPITAL, UNIVERSITY—Drs. Olin Mansell Goodwin, Buckhannon, W. Va.; and Adney Kemple Sutphin, Beckley, W. Va.

NORFOLK GENERAL HOSPITAL, NORFOLK—Drs. Melvin Gillette Baynard, North Emporia; Charles Briel Keppler, Richmond; Fletcher Lindsay Rai-

- ford, Franklin; Luther Bradford Waters, Jr., Lynchburg; and Julian Andrews White, Virginia Beach.
- NORFOLK MARINE HOSPITAL, NORFOLK—Dr. Arthur Broadus Gravatt, Jr., Ellerson.
- LEWIS-GALE HOSPITAL, ROANOKE — Dr. Douglas Best Stratton, Roanoke.
- SAINT JOSEPH HOSPITAL, SYRACUSE, N. Y.—Dr. Bradford Sherwood Bennett, Lowville, N. Y..
- HARLEM HOSPITAL, NEW YORK, N. Y.—Drs. Irving Chofnas, Roxbury, Mass.; and Abraham Zies, New York, N. Y.
- BROOKLYN JEWISH HOSPITAL, BROOKLYN, N. Y.—Dr. Herbert Gershberg, New York, N. Y.
- QUEENS GENERAL HOSPITAL, JAMAICA, L. I., N. Y.—Dr. Jerome David Markham, Lawrence, L. I., N. Y.
- JERSEY CITY MEDICAL CENTRE, JERSEY CITY, N. J.—Drs. Charles Francis Baldini, Jr., Union City, N. J.; Samuel Blank, Hyde Park, Mass.; Percy John McElrath, Jr., Bramwell, W. Va.; Edith Katherine Mangone, New York, N. Y.; John Jerry Marsella, Schenectady, N. Y.; George Albert Stewart, Jr., Norfolk; and William Robert Woolner, New York, N. Y.
- ELIZABETH GENERAL HOSPITAL AND DISPENSARY, ELIZABETH, N. J.—Dr. Walter Humphrey Buffey, Elizabeth, N. J.
- CITY HOSPITAL, WINSTON-SALEM, N. C.—Drs. William Henry Bandy, Lincolnton, N. C.; Wiley Aven Preston, Abingdon; and Herbert Walker Burton, Brown's Summit, N. C.
- CHARLOTTE MEMORIAL HOSPITAL, CHARLOTTE, N. C.—Dr. Walter Jones McLendon, Kenansville, N. C.
- REX HOSPITAL, RALEIGH, N. C.—Dr. Elisabeth Martin, Florence, Ala.
- CHARLESTON GENERAL HOSPITAL, CHARLESTON, W. VA.—Drs. Donald Ferguson Babb, Philippi, W. Va.; Mary Virginia Gallagher, Charleston, W. Va.; William Ward Huffman, Webster Springs, W. Va.; and Lester Millard Mason, Seth, W. Va.
- CHESAPEAKE AND OHIO HOSPITAL, HUNTINGTON, W. VA.—Drs. Norris Foster Hines, Huntington, W. Va.; Wade Herbert Rardin, Beckley, W. Va.; and William Frederick Richmond, Beckley, W. Va.
- PHILADELPHIA GENERAL HOSPITAL, PHILADELPHIA, PA.—Dr. Herbert Clifton Allen, Jr., Richmond.
- WILKES-BARRE GENERAL HOSPITAL, WILKES-BARRE, PA.—Dr. Isa Costen Grant, Greenville, N. C.
- BRYN MAWR HOSPITAL, BRYN MAWR, PA.—Dr. Maurice Raymond Nance, Norfolk.
- CINCINNATI GENERAL HOSPITAL, CINCINNATI, OHIO—Dr. Ernest Beverly Agee, Jr., Dehue, W. Va.
- HENRY FORD HOSPITAL, DETROIT, MICH.—Dr. John Otto Boyd, Jr., Roanoke.
- ELOISE HOSPITAL, ELOISE, MICH.—Dr. Edward Toshio Matsuoka, Honolulu, Hawaii.
- GALLINGER MUNICIPAL HOSPITAL WASHINGTON, D. C.—Dr. Pete Commings, Charlottesville.
- GARFIELD MEMORIAL HOSPITAL, WASHINGTON, D. C.—Dr. Margarita Fuertes-Correa, Arecibo, P. R.
- WALTER REED GENERAL HOSPITAL, WASHINGTON, D. C.—Dr. Arthur Abbitt Kirk, Suffolk.
- BAYAMON CHARITY DISTRICT HOSPITAL, BAYAMON, P. R.—Drs. Jorge Anibal Colon-Davila, Rio Piedras, P. R.; and Jose Luis Robert, Santurce, P. R.
- BARONESS ERLANGER HOSPITAL, CHATTANOOGA, TENN.—Dr. Estill Leftrage Caudill, Jr., Elizabethton, Tenn.
- BAPTIST MEMORIAL HOSPITAL, MEMPHIS, TENN.—Dr. Herschell Marcus Cooke, Grayson, Ky.
- NORWALK GENERAL HOSPITAL, NORWALK, CONN.—Dr. Robert Lawrence Corbell, Jr., Portsmouth.
- UNIVERSITY OF OKLAHOMA HOSPITAL, OKLAHOMA CITY, OKLA. — Dr. Fletcher Ishmael Dorsett, Thomasville, N. C.
- UNIVERSITY OF ARKANSAS HOSPITAL, LITTLE ROCK, ARK.—Dr. Robert Sears Faircloth, Norfolk.
- STATE OF WISCONSIN GENERAL HOSPITAL, MADISON, WIS.—Drs. Carolyn Moore McCue, Richmond; and Howard McDowell McCue, Jr., Richmond.
- UNION MEMORIAL HOSPITAL, BALTIMORE, MD.—Dr. William Lowndes Peple, Jr., Richmond.
- LOUISVILLE CITY HOSPITAL, LOUISVILLE, KY.—Dr. Luke Walter Query, Jr., Charlotte, N. C.
- ROPER HOSPITAL, CHARLESTON, S. C.—Dr. James Slade Rhodes, Jr., Williamston, N. C.
- Others who received their degrees at this time are:
Dr. Sidney Lyons, Lexington.
Dr. Maysville Owens Page, Richmond.
Dr. John Stuart Williams, North Garden.

UNIVERSITY OF VIRGINIA

The final exercises of the University of Virginia were held June 6th through 9th. There were 540 members of the graduating class, the largest in the history of the school. Alumni Day was on the 7th

and Louis A. Johnson, former assistant secretary of war, welcomed the graduates into the alumni body. Marshall Field of New York City delivered the commencement address.

It was announced at this time that the sum of \$50,000 had been given the University for the purpose of purchasing, remodeling and equipping a large private residence to be operated as a convalescent home for crippled children under the Department of Orthopedics.

The fifty-four graduates in medicine, with hospital appointments, are as follows:

UNIVERSITY OF VIRGINIA HOSPITAL, UNIVERSITY—Drs. Benjamin Walter Berner, Paterson, N. J.; Roy Stinson Bigham, Jr., Charlotte, N. C.; William Edward Bray, Jr., University; John Gordon Coleman, Lexington, Ky.; William Robert Dandridge, Kermit, W. Va.; Jorge Garcia-Bird, Fajardo, P. R.; James Mercer Moss, Arlington; Joseph Lawson Platt, Emory; Charles D. Schilling, Glen Cove, N. Y.; Philip Laub Shultz, Charlottesville; and Harold Taylor Yates, University.

HOSPITAL DIVISION, MEDICAL COLLEGE OF VIRGINIA, RICHMOND—Drs. James Motley Booker, Lottsburg; and Alvah Livingston Herring, Jr., Richmond.

UNITED STATES MARINE HOSPITAL, NORFOLK—Dr. George Parker Hand, Jr., Norfolk.

LEWIS-GALE HOSPITAL, ROANOKE—Dr. Rowland Hatton Robertson, Jr., Suffolk.

HOSPITAL OF ST. VINCENT DE PAUL, NORFOLK—Dr. Aubrey Lawrence Shelton, Norfolk.

ST. ELIZABETH'S HOSPITAL, RICHMOND—Dr. Spotswood Douglas Stoddard, Savannah, Ga.

VIRGINIA MASON CLINIC, SEATTLE, WASH.—Drs. Fred Edward Cleveland, Jr., Swoope; Marcellus Alexander Johnson, III, Roanoke; and Thomas McCreery Sawyers, Hinton, W. Va.

NEW YORK HOSPITAL, NEW YORK—Dr. George Clayton Armistead, Jr., Roanoke.

ST. LUKE'S HOSPITAL, NEW YORK—Drs. John Lee Couper, Lexington; and Edward Eugene Mullen, Smithfield, N. C.

CORNELL DIVISION, BELLEVUE HOSPITAL, NEW YORK—Dr. Clara Lyman Day, Hartford, Conn.

NEW YORK POST-GRADUATE HOSPITAL, NEW YORK—Dr. Edward Gill Face, Jr., Norfolk.

STRONG MEMORIAL HOSPITAL, ROCHESTER, N. Y.—Dr. John Richard Morris, Charlottesville.

BARONESS ERLANGER HOSPITAL, CHATTANOOGA,

TENN.—Drs. Walter Buckner, II, Roanoke; and Robert Harrison Giles, Jr., Roanoke.

VANDERBILT UNIVERSITY HOSPITAL, NASHVILLE, TENN.—Dr. Willis Merriman Hendricks, Roanoke.

ST. FRANCIS HOSPITAL, PITTSBURGH, PA.—Dr. Edward Thomas Dunn, Jr., Clifton Forge.

ST. LUKE'S HOSPITAL, BETHLEHEM, PA.—Dr. Lewis Edward Mangus, Vesuvius.

WILKES-BARRE GENERAL HOSPITAL, WILKES-BARRE, PA.—Dr. Edward Seymour Orzac, Norfolk.

DUKE UNIVERSITY HOSPITAL, DURHAM, N. C.—Drs. Samuel Marshall McDaniel, Jr., University; and Armistead Dandridge Williams, Richmond.

ST. LOUIS CITY HOSPITAL, ST. LOUIS, MO.—Dr. James Britton Bain, Portsmouth.

HARRISON MEMORIAL METHODIST HOSPITAL, FT. WORTH, TEX.—Dr. Henry Rives Coleman Chalmers, Phenix.

CHURCH HOME AND INFIRMARY, BALTIMORE, MD.—Dr. Hollen Garber Helbert, Harrisonburg.

SOUTH BALTIMORE GENERAL HOSPITAL, BALTIMORE, MD.—Dr. Abraham Lewis Kolodny, Norfolk.

UNION MEMORIAL HOSPITAL, BALTIMORE, MD.—Dr. Alexander Erskine Sproul, Staunton.

JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.—Dr. Allan Bevier Warren, Jr., Orange.

SINAI HOSPITAL, BALTIMORE, MD.—Dr. Daniel Yuter, Charlottesville.

TOURO INFIRMARY, NEW ORLEANS, LA.—Dr. George Anderson Hardie, Auburn, Ala.

CHARITY HOSPITAL OF LOUISIANA, NEW ORLEANS, LA.—Dr. Cecil Lowry Sinclair, Hampton.

CLEVELAND CITY HOSPITAL, CLEVELAND, OHIO.—Dr. Thomas Cobb King, Jr., Anniston, Ala.

CINCINNATI GENERAL HOSPITAL, CINCINNATI, OHIO—Dr. Kelly Tilson McKee, Bristol.

UNIVERSITY OF MINNESOTA HOSPITAL, MINNEAPOLIS, MINN.—Dr. William Smith Hawkins, Greenville, S. C.

WALTER REED HOSPITAL, WASHINGTON, D. C.—Dr. Newton Wheeler Larkum, Charlottesville.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL, WASHINGTON, D. C.—Dr. Carey Addison Stone, Jr., Crewe.

GALLINGER MUNICIPAL HOSPITAL, WASHINGTON, D. C.—Dr. Betty Gordon Williams, Richmond.

INDIANAPOLIS CITY HOSPITAL, INDIANAPOLIS, IND.—Dr. James Spicer Murray, Baltimore, Md.

HARPER HOSPITAL, DETROIT, MICH.—Dr. Hugh Leander Sulfridge, Jr., Charlottesville.
 GRADY MEMORIAL HOSPITAL, ATLANTA, GA.—Dr. John Mackey Trapnell, Jr., Charlestown, W. Va.
 MONTREAL GENERAL HOSPITAL, MONTREAL, CANADA—Dr. Philip Cary Whitehead, Chatham.
 EMORY UNIVERSITY HOSPITAL, ATLANTA, GA.—Dr. William Rush Whitman, Jr., Roanoke.

The Jefferson Medical College of Philadelphia.

The One Hundred Sixteenth Annual Commencement was held on June 6, 1941. The commencement address was delivered by Dr. J. M. T. Finney, Emeritus Professor of Surgery, Johns Hopkins Medical School, on "The True Province of the Doctor".

The Graduating Class numbered 120, bringing the total number of graduates to 16,814. The graduates represented eighteen different states, the Territory of Hawaii and Puerto Rico, Korea and Iran. Forty-three members of the Graduating Class were commissioned as First Lieutenants in the Medical Reserve Corps of the United States Army. The commissions were presented by Dr. Asa M. Lehman, Lt. Col., M. C., U. S. A.

The honorary degree of Doctor of Letters was conferred upon John Miller Turpin Finney, M. D., LL.D., Emeritus Professor of Surgery, Johns Hopkins Medical School.

The Annual Alumni Dinner was held on June 5, 1941, at the Bellevue-Stratford Hotel with 536 alumni in attendance: Dr. Edward L. Bauer, '14, President of the Alumni Association, presided. The speakers were Mr. Robert P. Hooper, President of the Board of Trustees; Dr. Henry E. Radasch, Pennsylvania, Professor of Histology and Embryology, in the Department of Anatomy, representing the Class of 1901; Dr. Francis F. Borzell, Pennsylvania, representing the Class of 1906; Dr. Frank H. Krusen, Minnesota, representing the Class of 1921; Dr. John H. Chambers, Commander M. C., U. S. N., representing the Class of 1916, and Dr. John J. Gill, Pennsylvania, President of the graduating class and representing the Class of 1941.

Alumni Day and Ex-Internes' Day Clinics were held on June 4 and 5, in the Clinical Amphitheatre of the Jefferson Hospital.

The Graduating Class of 1941 presented a portrait of Dr. George Alvin Ulrich to the College on

March 6, 1941.

The following promotions in the teaching corps have been made during the past session: Dr. Lewis C. Scheffey, Professor of Gynecology; Dr. John B. Montgomery, Clinical Professor of Gynecology; Dr. Burgess L. Gordon, Clinical Professor of Medicine; Dr. Austin T. Smith, Associate Professor of Laryngology; Dr. Andrew Ramsay, Associate Professor of Histology and Embryology; Dr. Leandro M. Tocantins, Associate Professor of Medicine; Dr. Franklin R. Miller, Associate Professor of Medicine; Dr. William T. Lemmon, Assistant Professor of Surgery; Dr. C. Calvin Fox, Assistant Professor in Laryngology.

American Medical Association.

The ninety-second annual session of the Association in Cleveland, early in June, had a registered attendance through Thursday, next to the last day, of 7,194. Members of the Medical Society of Virginia who registered in the sixty-six reported from Virginia are:

CHARLOTTESVILLE

Dr. V. W. Archer
 Dr. H. B. Mulholland
 Dr. Oscar Swineford
 Dr. F. D. Woodward

NORFOLK

Dr. Ben L. Boynton
 Dr. R. DuVal Jones
 Dr. Walter B. Martin
 Dr. Julian L. Rawls

ROANOKE

Dr. Calvin T. Burton
 Dr. Robt. R. Rudolph
 Dr. Hugh H. Trout

PETERSBURG

Dr. Wright Clarkson
 Dr. L. S. Early

NEWPORT NEWS

Dr. J. Warren Sayre
 Dr. L. E. Stubbs

HARRISONBURG

Dr. J. H. Deyerle
 Dr. C. M. Vaughan

RICHMOND

Dr. Thomas Beath
 Dr. Regena Beck
 Dr. William Bickers
 Dr. R. D. Butterworth
 Dr. Guy W. Horsley
 Dr. J. Shelton Horsley
 Dr. William A. Johns
 Dr. J. D. Kernodle
 Dr. Fredk. Mandeville
 Dr. Emmett C. Matthews
 Dr. W. Ambrose McGee
 Dr. Walter L. Nalls
 Dr. Benj. Rawles, Jr.
 Dr. Wellford C. Reed
 Dr. I. C. Riffin
 Dr. M. P. Rucker
 Dr. James B. Stone
 Dr. Elam C. Toone, Jr.
 Dr. Warren T. Vaughan
 Dr. Harry Walker
 Dr. H. Hudnall Ware

Dr. E. M. Babb, Ivor.

Dr. Harloe Bailey, Rural Retreat.

Dr. L. O. Crumpler, Danville.

Dr. H. S. Daniel, Louisa.

Dr. Herman Lee Harris, Richlands.

Dr. C. C. Hatfield, North Holston.

Dr. R. L. Hillman, Emory.

Dr. L. A. Houff, Clifton Forge.
 Dr. A. D. Hutton, Marion.
 Dr. M. B. Jarman, Hot Springs.
 Dr. J. Paul Kent, Altavista.
 Dr. C. F. Manges, Blacksburg.
 Dr. Lemuel E. Mayo, Portsmouth.
 Dr. H. C. McCoy, Gordonsville.
 Dr. Geo. A. Reynolds, Bowling Green.
 Dr. D. M. Thomasson, Lynchburg.

Dr. Frank H. Lahey succeeded to the presidency and Dr. Fred W. Rankin of Lexington, Ky., former North Carolinian, was named president-elect, with Dr. Charles A. Dukes of Oakland, Calif., as vice-president. Dr. Olin West continues as secretary and Dr. H. H. Shoulders of Nashville, Tenn., as speaker of the House of Delegates.

Atlantic City is to be the 1942 place of meeting.

The West Virginia State Medical Association

Met in Charleston the middle of May, under the presidency of Dr. Robert K. Buford of that city. Dr. Richard O. Rogers of Bluefield was elected president and will take office January 1, 1942. He is a native of Virginia, and a graduate of the Medical College of Virginia in the class of 1907 and thus well known to many of our readers. The vice-presidents will be Dr. Guy H. Michael of Belington and Dr. E. H. Starcher of Earling. Dr. T. M. Barber of Charleston will continue as treasurer and Mr. Joe W. Savage also of Charleston as executive secretary. It was decided to return to White Sulphur Springs for the 1942 meeting.

The Neuropsychiatric Society of Virginia

Held its regular meeting at the Academy of Medicine Building in Richmond on June 18th at 2:00 p. m., with Dr. W. Gayle Crutchfield of Richmond, president, presiding. Dr. E. H. Williams, also of Richmond, was at the secretary's desk. The program was as follows:

Psychodynamic Aspects of War and Extenuating Crises—Dr. Howard R. Masters, Richmond.

A Description of the Rorschach Experiment—Dr. James B. Funkhouser, Marion.

Psychoses Among Students Requiring Hospitalization—Dr. O. B. Darden, Richmond.

Psychotherapy in Children—Dr. Leo Kanner, Baltimore.

Dr. Kanner, who is associate professor of psychiatry at Johns Hopkins Medical School, was the invited guest of the Society.

Dinner at the Richmond Hotel followed the meeting.

Medical Society of the State of North Carolina.

Dr. Hubert Haywood of Raleigh presided at the last meeting of this Society held at Pinehurst, May 19-21. Before adjournment, Dr. F. Webb Griffith of Asheville was installed as president. Those elected at this session are: President-elect, Dr. Donnell B. Cobb, Goldsboro; vice-presidents, Dr. Thomas DeL. Sparrow of Charlotte and Dr. T. L. Carter of Gatesville; and secretary-treasurer, Dr. Roscoe D. McMullan of Red Springs. It was decided to hold the 1942 meeting in Charlotte.

Medical Society of the District of Columbia.

At the annual meeting of the Society, Dr. A. Magruder MacDonald was chosen president-elect to take office in 1942, and Drs. J. Lawn Thompson, Jr., and Grace G. Purse were elected vice-presidents. In July Dr. Henry R. Schreiber will succeed Dr. Daniel L. Borden as president.

Honors for Faculty Members of the New York Polyclinic Medical School and Hospital.

Dr. Joseph F. McCarthy, Professor of Urology at the New York Polyclinic Medical School and Hospital, was awarded the Francis Amory prize by the American Academy of Arts and Sciences, for his work in Urology.

Dr. Samuel J. Kopetzky, Professor Otolaryngology at the New York Polyclinic Medical School and Hospital, has been elected president of the Medical Society of the State of New York.

Dr. Maximilian A. Ramirez, Professor of Medicine at the New York Polyclinic Medical School and Hospital, has been elected president of the Medical Society of the County of New York.

Dr. L. Nelson Bell,

An alumnus of the Medical College of Virginia, class of '16, for sometime head of the surgical department of the Tsingkiangpu General Hospital, Southern Presbyterian Mission in Tsingkiangpu, China, has returned to the United States this summer on regular furlough and will have his headquarters in Waynesboro while here.

In a booklet giving a summary of the work of this hospital for 1940, it is interesting to note the large amount of work accomplished. The total number of patients in the hospital during the year, including 116 babies born in the hospital, was 6,837. In addition, there were 128,974 out-patient depart-

ment visits, which includes the same patient only once for each day, irrespective of the number of departments visited.

Dr. Raiford Honored.

On March 18, 1941, the Fourth District and Southside Virginia Medical Society conferred an honor upon Dr. R. L. Raiford of Franklin by presenting him with a gold watch and chain properly engraved to express its deep sense of appreciation for his long service as secretary of the Southside Virginia Medical Society.

The presentation was made by Dr. C. S. Dodd of Petersburg, the last president of the Southside Virginia Medical Society before its consolidation with the Fourth District Society to form the Fourth District and Southside Virginia Medical Society.

Dr. C. C. Coleman,

Richmond, president of the William and Mary Alumni Association and recently appointed board member by Governor Price, was honored at the commencement exercises of his alma mater with a medal for faithful and devoted service to his college.

University of Virginia School of Medicine News.

On May 13th, Dr. W. W. Waddell, Jr. spoke before the Mississippi State Medical Association, meeting in Biloxi. His subject was Vitamin K in the Newborn.

At the meeting of the St. Louis Medical Society on May 13th, Dr. Vincent W. Archer discussed X-ray and Gastro-Intestinal Diagnosis.

On May 22nd, Dr. J. M. Meredith participated in the Post-Graduate Course in Medicine and Surgery for the Loudoun County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. He spoke on Management of Head Injuries.

At the meeting of the American Otological Society in Atlantic City on May 26th, Dr. Fletcher D. Woodward presented a paper on The Use of a Temporary Inexpensive Bite Block to Determine the Relationship Between the Closed Bite and Temporomandibular Joint Symptoms.

Drs. Fletcher Woodward and Oscar Swineford, Jr. presented a joint paper before the Oto-Rhino-Laryngological Section of the American Medical

Association in Cleveland entitled, Allergic Rhinitis.

At the recent meeting of the American Society for the Study of Allergy in Cleveland, Dr. Oscar Swineford, Jr. was elected Vice-President for the coming year.

Fifty-four students were graduated with the Degree of Doctor of Medicine at the Finals Exercises on June 9, 1941.

The Second Post-Graduate Course in Medicine sponsored by the Department of Internal Medicine of the University of Virginia and the Department of Clinical and Medical Education of the Medical Society of Virginia was held at the Medical School and Hospital from June 16th to 21st. The guest speakers were Dr. Warfield M. Firor, Associate Professor of Surgery at Johns Hopkins Medical School, who spoke on Sulfaguanidine, and Dr. Walter O. Klingman, Associate in Neurology at the College of Physicians and Surgeons in New York City, who discussed Autonomic Drugs. The list of those giving lectures and holding clinics included the following members of the Faculty of the University of Virginia Medical School: Drs. William E. Bray, Professor of Clinical Pathology; Edwin P. Lehman, Professor of Surgery and Gynecology; Sydney W. Britton, Professor of Physiology; Alfred Chanutin, Professor of Biochemistry; James R. Cash, Professor of Pathology; Tiffany J. Williams, Professor of Obstetrics and Gynecology; Robert V. Funsten, Professor of Orthopedics; Dudley C. Smith, Professor of Dermatology and Syphilology; Fletcher D. Woodward, Professor of Diseases of the Ear, Nose and Throat; Vincent W. Archer, Professor of Roentgenology; Henry B. Mulholland, Professor of Practice of Medicine; J. Edwin Wood, Professor of Practice of Medicine; C. Bruce Morton, Professor of Clinical Surgery and Gynecology; George M. Lawson, Professor of Preventive Medicine and Bacteriology; Andrew D. Hart, Professor of Clinical Medicine; Eugene M. Landis, Professor of Internal Medicine; David C. Wilson, Professor of Psychiatry and Neurology; William W. Waddell, Associate Professor of Pediatrics; Samuel A. Vest, Associate Professor of Urology; Edward L. Corey, Associate Professor of Physiology; Staige D. Blackford, Assistant Professor of Medicine; Oscar Swineford, Jr., Assistant Professor of Medicine; John M. Meredith, Assistant Professor of Neurological Surgery; Frank B. Stafford, Assistant Professor of Phthisiotherapy; Arthur M.

Smith, Instructor in Surgery; William H. Parker, Instructor in Surgery; Byrd S. Leavell, Instructor in Medicine; William R. Hill, Instructor in Surgery; and Julian R. Beckwith, Instructor in Medicine. Thirty-one physicians registered for the course.

Dr. Wyndham B. Blanton,

Of Richmond delivered the commencement address at the exercises of the Medical College of the State of South Carolina in Charleston, June 5. He spoke on the Bedside Manner.

Dr. E. T. Terrell

Was elected head of the Williamsburg Lions Club at its meeting on June the 3rd. He with other new officers will be installed at the July meeting.

Symposium on Industrial Health.

The department of preventive medicine at the Medical College of Virginia is putting on this year its second symposium on industrial health. The meetings will be held in the Simon Baruch Auditorium, Thursday and Friday, September 11 and 12, 1941.

The Virginia Manufacturers' Association and the Richmond Chamber of Commerce are cooperating again this year in the program, and the Committee on Industrial Health of the Medical Society of Virginia and the State Health Department's Bureau of Industrial Hygiene are among the sponsors of the program.

The night program this year is again arranged to be of interest to laymen as well as to the medical profession. Mr. Philip Drinker, professor of industrial hygiene, at the Harvard School of Public Health, Boston, will speak on "The Significance of Industrial Health in National Defense". Dr. Edward J. Stieglitz, of the National Institute of Health, United States Public Health Service, will talk on "Aging as a Problem of Industrial Health".

There are to be morning and afternoon programs both on Thursday and Friday. On these programs are both the president of the American Association of Industrial Physicians and Surgeons and the president of the American Industrial Hygiene Association.

Dr. Walter B. Martin, president of the Medical Society of Virginia, will tell briefly what work the State Medical Society's Committee on Industrial Health is doing. The full program will be printed in a later issue of the MONTHLY.

Dr. Lockburn B. Scott,

Of Norfolk, left on June the 7th to spend the summer visiting his daughters in Winnipeg, Manitoba, Canada. He will return to Norfolk the latter part of September.

Dr. Linwood D. Keyser,

Roanoke, by invitation, discussed "Recent Advances in Medical Research" in Blacksburg, May 30th, at a banquet of the Virginia Polytechnic Institute, Chapter of Sigma Xi, national scientific honorary fraternity. Dr. Keyser is a former member of the Mayo Clinic chapter of this fraternity and became affiliated with the Blacksburg chapter last December.

Married.

Dr. John Hansford Thomas, Jr., of Greenville and Miss Mary Johnston Lasley, of Staunton, June 19.

Dr. John Osborne McNeel, University, and Miss Rose Lee Williams, Charlotte, N. C., June 16.

Dr. William Taliaferro Thompson, Jr., of Richmond, but now located in Boston, Mass., and Miss Jessie Gresham Baker, Richmond, June 21.

Dr. Kenneth Jerome Cherry and Miss Alice Palmer Cottingham, both of Richmond, June 14.

Dr. Francis Record Whitehouse, recently intern-ing at Charity Hospital in New Orleans, but now at Mayo Clinic, Rochester, Minn., and Miss Doris Irion of Dallas, Texas, June 21.

The American Gynecologic Society

Held its annual meeting May 26-28, at Colorado Springs, this being the first time the Society has met so far west. The membership is slightly over a hundred and about 50 per cent of these attended. An excellent program was presented with the president, Dr. Jennings C. Litzenberg of Minneapolis presiding. Dr. William C. Danforth of Evanston, Ill., was elected president; Drs. H. J. Stander of New York City and C. B. Ingraham of Denver, vice-presidents; Dr. Howard Taylor, Jr., of New York City, secretary; and Dr. Philip F. Williams of Philadelphia, treasurer. Dr. M. P. Rucker of Richmond was among those attending.

The next meeting will be held at Sky Top in the Pocono Mountains of Pennsylvania in the spring of 1942.

Dr. Thomas M. Winn,

Of Covington, received the highest number of

votes in the councilmanic election held in that town in June and will be next mayor of Covington. In addition to his civic interests, Dr. Winn is a prominent eye, ear, nose and throat specialist of that town.

Gill Memorial Eye, Ear and Throat Hospital,

Roanoke, has been placed on the approved list for residences in ophthalmology, by the Council on Medical Education of the American Medical Association, according to recent announcement.

The American Congress of Physical Therapy

Will hold its twentieth annual scientific and clinical session September 1 to 5, inclusive, at The Mayflower, Washington, D. C. The mornings will be devoted to the annual instruction course, and the afternoons and evenings to the scientific and clinical sessions. The seminar and convention proper will be open to all physicians and qualified technicians. All the phases of physical medicine will be covered in the general program, including a special symposium on poliomyelitis. The program will be of interest to the general practitioner as well as to the specialist in physical therapy. For information concerning the seminar and preliminary program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

At the same time the twenty-fifth annual meeting of the American Occupational Therapy Association will be held at The Mayflower. A combined meeting will be held on Wednesday, September 3. For information concerning the Occupational Therapy Association meeting, address Mrs. Meta R. Cobb, 175 Fifth Avenue, New York City.

Dr. MacNider Receives Kober Medal.

At the recent meeting of the Association of American Physicians, the Kober Medal was awarded to Dr. William de Berniere MacNider, Kenan Professor of Pharmacology in the University of North Carolina.

The Kober Medal was established some fifteen years ago by Dr. Kober, an eminent person at Georgetown University, to emanate from Georgetown University, and be given through a recommendation by the Council of the Association of American Physicians to an individual who has made an outstanding contribution in medicine or in public health. The medal has been awarded in previous years to Dr. Simon Flexner, William H. Welch, Nogouchi, Minot, Whipple, Abel, Richards and General F. F.

Russell, of the School of Public Health of Harvard University. Next year the award is to be made to Dr. D. D. Van Slyke, of the Rockefeller Institute Hospital.

Doctors and Defense.

Among the health threats aggravated by military conditions, syphilis and gonorrhea rank high—in the World War only below battle casualties and influenza. Any attack against venereal disease must involve an understanding on the part of the public, the individual concerned, and above all, by the physician. Two new popular educational folders of the Public Health Service are aimed at these objectives:

Venereal Disease and National Defense (VD Folder No. 7)—Outlines the important elements of the Army-Navy-public health venereal disease control agreement as it relates to community action.

The Doctor Says (VD Folder No. 4)—Points up the importance of blood tests and physical examinations before marriage and stresses the vital role of the private practitioner.

Copies may be obtained by direct order to the Superintendent of Documents, Washington, D. C., for \$1 per 100 copies, and \$7 per 1,000.

The Leslie Dana Gold Medal,

Awarded annually for outstanding achievements in the prevention of blindness and the conservation of vision, will be presented this year to Dr. Arnold H. Knapp of New York City, it is announced by the National Society for the Prevention of Blindness.

Dr. Knapp is editor-in-chief of the *Archives of Ophthalmology* and professor emeritus of ophthalmology in the Columbia University College of Physicians and Surgeons. He has been the recipient of many honors in recognition of outstanding ability.

Dr. Wortley F. Rudd,

Dean of the School of Pharmacy of the Medical College of Virginia, was the recipient of the honorary degree of Doctor of Science at the commencement exercises of the University of Maryland, early in June.

Dr. T. S. Ussery.

Recently of Norton, has located in Leesburg where he will be engaged in practice.

Dr. and Mrs. W. Fitzgerald Cavedo

Recently returned to their home in Richmond after a stay in New York City where Dr. Cavedo took a special course in obstetrics and gynecology at the New York Polyclinic Medical School and Hospital.

Dr. Paul R. MacFayden, Jr.,

Class of '29, University of Virginia, who has recently been engaged in health work at Concord, N. C., has been transferred to Richmond County, N. C., with headquarters at Rockingham.

Changes in Field Personnel of State Health Department.

Dr. John G. McNiel has been appointed Health Officer of Bristol-Washington Health Department, with headquarters at Bristol, succeeding Dr. James M. Suter, who has been called to military duty. Dr. McNiel has just returned from Johns Hopkins where he completed a postgraduate course in public health.

Dr. Paul W. Bowden, who has just completed his postgraduate work at Johns Hopkins, has been appointed Health Officer of Charlotte County, succeeding Dr. W. P. Terry, who has been called to military service.

Dr. T. F. McGough has been transferred from Northampton County and appointed Health Officer of Pulaski County at the resignation of Dr. Allen W. Lane.

Dr. William Y. Garrett, former Health Officer of Northampton County and who has been studying at Johns Hopkins for the past nine months, again has been appointed Health Officer of Northampton County.

Dr. William M. Moir has resigned as Health Officer of Smyth County and Dr. W. W. Griggs, who also has completed his postgraduate work at Johns Hopkins, has been appointed to succeed him.

Board of Health of Richmond.

In order to coordinate the Public Health Activities of the City of Richmond, the Mayor has appointed a Board of Health composed of Dr. Wm. H. Higgins, chairman; Dr. Fred Fletcher, Dr. Emily Gardner and Robert Sytle. The chief functions of this Board are to nominate a Commissioner of Health, and an Epidemiologist and to act in an advisory capacity to these officers in all matters pertaining to the health of Richmond.

Pending these appointments the Board is supervising the activities of the various branches of the Health Department and is being ably assisted by Dr. R. M. Wilson, who is serving as active Epidemiologist.

Dr. Millard C. Hanson, of Pittsburgh, a former Health Officer of Toledo, has been appointed Commissioner of Health of Richmond, and will enter

upon his new duties on August 1st. He will be the city's first full-time health officer since 1924.

Dr. James L. Davis,

Class of '36, University of Virginia, who has been practicing for sometime at Thacker Mines, W. Va., has located in Waynesboro.

The Holland-Rantos Company

Have been appointed exclusive distributors for Rantex, the newest development for surgical masks and caps—a patented fibre product, insoluble in live steam, boiling water or common solvents. The masks and caps are exceptionally cool, comfortable, light, and free from irritating lint or yarn. They are inexpensive enough to be discarded after a single use, yet can be autoclaved or sterilized. The masks are shaped to fit the face; the caps are well tailored, and they are already being used in many of the larger hospitals.

Dr. E. P. Ambrose,

Recently of Christiansburg, where he was connected with the New Altamont Hospital, is now located in Dublin where he is working for Mason and Hanger Company, the New River Ordnance Plant.

Dr. R. Finley Gayle, Jr.,

Richmond psychiatrist and a member of the State Hospital Board, has been elected to membership in the American Neurological Association, whose membership is limited to about one hundred and fifty for the whole country. Other Virginia members are Drs. Beverley R. Tucker and C. C. Coleman of Richmond and Dr. David C. Wilson of Charlottesville.

G. D. Searle & Company,

Well-known pharmaceutical manufacturers of Chicago, are building new laboratories and plant which will increase their present quarters nearly three times. The building will be of modern streamlined design and will be fitted out with the most modern equipment devices and apparatus known to the sciences of pharmacy and chemistry. Physicians are invited to visit and inspect these laboratories at any time.

Dr. William R. Hill,

Class of '34, University of Virginia Medical School, is locating in Richmond, July 1, where he will be associated with Dr. A. L. Herring for the practice of general surgery, with offices at Grace Hospital. Dr. Hill interned at the University Hospital and has since been connected with the surgical de-

partment of that institution. For the past two years he has been an instructor in surgery in its medical school.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Carroll, P. L.—Atlas of the frog.

Chandler, A. C.—The eater's digest.

Ford, W. W.—Bacteriology.

Himes, N. S.—Your marriage.

Hoskins, R. G.—Endocrinology.

Leriche, R.—The surgery of pain.

Lewis, N. D. C.—Short history of psychiatric achievements.

Menninger, K. A.—The human mind.

Menninger, K. A.—Man against himself.

Shepard, H. H.—Chemistry and toxicology of insecticides.

Wanted—Medical Officers, Nurses, Technicians.

As part of the National Defense Program, the U. S. Civil Service Commission, Washington, D. C., announces a need for medical officers, nurses for hospitals and in public health work, medical technicians and laboratory workers. Requirements for these positions have been amended in some instances, so that persons interested in any of the above are urged to send their applications to the Commission's Washington office. Further information and application forms may be obtained at any first- or second-class post office or from the Commission.

No written examination now required for nurses.

Good Practice for Sale.

If I can sell my practice and residence, I will retire on account of age and turn office and everything over to buyer. This is in a good town of about 5,000 inhabitants and a good country to serve. Only two other physicians. A young to middle-aged man could easily make four to six thousand dollars a year. Would also consider exchange for a small farm.

If interested, address No. 155, care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond. (*Adv.*)

X-Ray Unit For Sale—

Complete radiographic and fluoroscopic outfit, including all darkroom equipment. Reasonable. Owner called in military service. Address "X-Ray", care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond. (*Adv.*)

Obituary Record

Dr. William Tell Oppenheimer,

For many years a widely known and popular surgeon of Richmond, died June the 11th, at the age of eighty years. Upon completion of his academic education, he studied medicine at the Medical College of Virginia, from which he graduated in 1881, and later studied at the University of New York. He began practice in Richmond in 1885 and for a number of years was president of the old Richmond Board of Health. He was also chief surgeon for the Richmond, Fredericksburg and Potomac and for the Chesapeake and Ohio Railways, a member and former president of the Richmond Academy of Medicine, and affiliated with many other organizations. He joined the Medical Society of Virginia in 1886. He is survived by his wife, and two children, a son, Dr. W. T. Oppenheimer, Jr., having died just a few weeks ago.

Dr. Frederick M. Brooks,

One of the oldest physicians of Virginia engaged in active practice, died June the 21st at the home of a patient he was attending. Dr. Brooks was born in Fairfax County eighty-two years ago last December. Upon completion of his medical course at the University of Pennsylvania in 1883, he returned to his native county and had been practicing there ever since. He had held positions of importance in his community, having been president of the National Bank of Fairfax for more than twenty-five years, and for ten years chairman of the county school board. He was a charter member of the Fairfax County Medical Society and had been a member of the Medical Society of Virginia for fifty years.

Dr. Thomas David Jones,

Popular pediatrician of Richmond, died on June the 12th, after an illness of several months. He was sixty-two years of age and a graduate of the Medical College of Virginia in the class of 1906. He later took postgraduate work in Boston and New York. Dr. Jones had practiced in Richmond for thirty-five years and at the time of his death was assistant professor of pediatrics at the Medical College of Virginia. He was for several years secretary-treasurer of the Richmond Academy of Medicine, first vice-president of the Medical Society of Virginia in 1926, and a member of several pediatric societies, in all

of which he took an active part. He is survived by his wife and four sons, one of them being Dr. John Paul Jones of this city.

Dr. Rollie T. Akers,

Aged 83, dean of Floyd County physicians, died at his home in Alum Ridge, June 16. Dr. Akers was a pioneer in his profession in Alum Ridge and served his community faithfully for over half a century. He has been a member of the Medical Society of Virginia for many years. Dr. Akers was also a minister of the Church of the Brethren, a County School Board and Board of Health member, and a bank director. His wife and five sons, one of whom is Dr. Waller C. Akers of Stuart, survive him.

Dr. Franklin McCue Hanger,

For many years a prominent specialist of Staunton, died June the 17th, after a long illness. He was a native of Augusta County and seventy-nine years of age. His medical education was received at the University of Virginia from which he graduated in 1883. Dr. Hanger was a former president of the Virginia Society of Oto-Laryngology and Ophthalmology and had been a member of the Medical Society of Virginia for nearly half a century. He is survived by three sons, one of them being Dr. Franklin M. Hanger, Jr., of New York City.

Dr. Llewellyn Powell,

For many years a prominent physician of Alexandria, died March the 13th, after having been in bad health for some time. He was a native of Alexandria and sixty-two years of age. Upon completion of his academic education, Dr. Powell took up the study of medicine at George Washington University, Washington, graduating in 1904. He was

for sometime city coroner of Alexandria, on the consulting staff of the Alexandria Hospital, and had been a member of the Medical Society of Virginia since shortly after starting to practice his profession.

Dr. David Oswald Foley,

Mount Jackson, well known physician in the Valley of Virginia for many years, died at the Rockingham Memorial Hospital on April the 24th, death being due to angina pectoris. Dr. Foley was born in Fauquier County in 1871 and received his medical education at the University of Maryland, from which he graduated in 1896. He had been a member of the Medical Society of Virginia since 1905.

Dr. Percy Edwin Lilly,

Kilmarnock, died suddenly on June 15th from a heart attack following a brief illness. He was a native of Baltimore and sixty-three years of age. Dr. Lilly graduated in medicine from the University of Maryland, Baltimore, in 1901. He moved to Brydton about thirteen years ago, and had been at Kilmarnock for the past year. He was president of the Northern Neck Medical Society and a member of the Lancaster-Northumberland Advisory Board for the selective service. He is survived by his wife.

Dr. Otho Perry Campbell,

Who practiced for a time at White Stone but was more recently in the Army and stationed at Camp Blanding, Fla., died in Richmond on June 2nd, where he had come to attend commencement exercises of his alma mater. Death was an after effect of pneumonia, from which he recently suffered an attack. Dr. Campbell was twenty-nine years of age and a graduate of the Medical College of Virginia in the class of '37. He was a son of Dr. and Mrs. Clarence Campbell of Sparta.



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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

THE N.Y. ACADEMY
OF MEDICINE

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**Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941**



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25 CENTS A COPY

MEDICINE IN PEACE AND WAR.*

THEODORE MEYER GREENE, PH.D.,
McCosh Professor of Philosophy, Princeton University,
Princeton, New Jersey.

It is not often, I fancy, that a philosopher and a humanist wholly ignorant of medicine is invited to address the graduating classes of a distinguished medical school. The very fact that I have been given this privilege betokens a clear realization on your part that the art of healing is, in its very essence, a humane enterprise which deeply concerns the common man because it contributes so greatly to his welfare and happiness. It is as a common man that I speak to you this evening—as a potential patient and as a representative of that large multitude of men, women, and children to whose service you are dedicating your lives.

In many respects the responsibilities which you, members of the graduating classes, are about to assume in a world at war are precisely the responsibilities which you would have had to assume in a world at peace. For yours is a profession dedicated to unrelenting warfare against an enemy which never ceases its onslaughts. Disease signs no armistice, no peace treaty; it is a foe which never capitulates. You are all of you, each in his or her special field of medicine, signing up for the duration of a war that will outlast you and your successors through countless generations.

And yet, in other important respects, the present crisis concerns you as vitally as it does the rest of us. It concerns you professionally because of the wounds which your profession must attempt to heal, and also because war between man and man affords our common enemy, disease, a golden opportunity to diversify and redouble its attacks upon the human race. If medicine is indispensable in times of peace, it is doubly so in times of war.

But the present crisis concerns you also as human

beings, as men and women who must keep the faith in a period of widespread skepticism and dismay. It is our lot, whether we like it or not, to be alive in an age of unprecedented social and spiritual upheaval. Seldom if ever have the very foundations of a culture been so shaken, the basis of ultimate belief rendered so insecure. Our nation, and we as individual citizens, are being challenged to declare the faith that is in us, to prove our metal, to demonstrate our nerve. What do we, individually and collectively, really believe in passionately enough to live for and, if necessary, to die for? What is our basic philosophy of life? What is the object of our highest allegiance? These are questions which each of us must face as honestly and intelligently as possible, because the course of events is already compelling us to answer them, and answer them without delay.

Medicine in a world at peace and medicine in a world at war—this is the dual topic which I invite you to consider on this solemn occasion.

I have been asking myself during the past weeks what it was that probably induced you to enter upon the training which you have just completed? Why have you chosen to become doctors and pharmacists, dentists and nurses? Can it have been primarily the hope of financial remuneration? Is money your chief concern—financial security, or economic comfort, or even wealth? To ignore or minimize the importance of what Plato calls “the art of wages” would be absurd. Even a philosopher need not be *that* unrealistic and other-worldly. The art of wages is an art which each of us must master if he is to live in a free society. And I, for one, believe that special talents and special industry merit unusual financial recognition. You are all entitled to financial security, and it is right and proper that each of you should

*Address given at the 103rd Commencement exercises of the Medical College of Virginia, Richmond, June 3, 1941.

receive an adequate economic reward for your services to your community.

But Plato, having duly recognized the art of wages, proceeds to make it clear that this art must, in any healthy society, be subordinated to those arts which are dedicated to more basic and more enduring human values. The true shepherd, he points out, devotes himself primarily to the welfare of his flock, the true carpenter, to the excellence of his craft, the true statesman, to the welfare of his people, the true doctor, to the health of his patients and not to his own financial gain. What Plato is here insisting on is the fact that all the serious professions in a well-regulated society are, each in its own way, a public trust, and that the truly professional man is one whose highest purpose is to contribute to human welfare. Only thus can man discharge his social responsibility and be a credit to his profession.

Plato also points out what is often forgotten, that only thus can we hope to achieve true happiness. This is one of the enduring paradoxes of human existence, that the surest way to achieve happiness is to ignore it and to devote one's self wholeheartedly to the task in hand, provided that this task has its own intrinsic interest and provided that it benefits mankind. This is especially true in the profession which you are entering. No profession has more intrinsic fascination; few are of greater value to man. If you prostitute your high calling by using it merely as a means to financial gains you will deserve the contempt of your fellows and inevitably forfeit your own self-respect. If, on the other hand, you regard your talents and your training as a public trust, a great adventure and a priceless opportunity to relieve human suffering, your reward will be the respect and love of all you serve. Sir William Osler once received a telegram which read, "Save my son George Halloran. God will pay all expenses." A doctor would certainly be ill-advised to rely too exclusively on God as his pay-master, but no doctor is worthy of the name who is not willing and eager to relieve suffering irrespective of financial remuneration.

If it is not mere financial gain, what is it, then, that has attracted you to medicine? There are, I believe, two sufficient reasons, and only two, for entering your profession—an interest in the science and art of medicine for its own sake, and an interest in human beings for their own sake. In some of you one of these twin motives may be predominant, in

others, the other motive. But those of you who are destined to be truly successful in your noble calling are precisely those in whom both interests are strong and strongly interfused. Your interest in, and respect for, people will enable you to use the science of medicine wisely, and to remember always that it is a means to a human and humane end—the preservation and enrichment of human life. Your interest in the theories and techniques of medical science will enable you to practice the art of healing in all its several branches with ever increasing skill. If you stifle or neglect to cultivate either interest you will jeopardize and ultimately destroy your usefulness; you will become inhumane scientists or sentimental quacks. If you combine reason and emotion, knowledge and love, your contribution will be incalculably great.

The science of medicine depends today, as never before, upon effective cooperation among specialists and between the specialist and the general practitioner. The specialist and the diagnostician are both essential, and neither can function with maximum safety or efficiency save through the continued cooperation of the other.

Our scientific knowledge has increased so enormously that no human being can hope to master, in a single lifetime, all that is known concerning the body and its ailments. Specialization in every field of medicine is therefore imperative, if available knowledge is to be put to use and if new knowledge is to be achieved. Mere specialization, however, will not suffice, either at the practical or at the theoretical level. At the level of medical theory, the narrow specialist becomes increasingly unable to interpret his findings in the light of all relevant facts. He loses his perspective, and ends with a distorted apprehension of the whole situation. The part is taken for the whole, causes are mistaken for effects and effects for causes, until a just appreciation of the complete picture is finally lost. Just because the organic is conditioned by the inorganic, conscious states by unconscious processes, and, on occasion, bodily health by mental attitude, the several medical disciplines which you have been studying during the past years are themselves mutually dependent. Every specialist is therefore dependent on every other specialist; each must learn from the rest if he is really to understand man's incredibly complex psycho-physical nature.

Cooperation is equally essential at the practical

level. Here the specialist and the general practitioner must work hand in hand, since each has his peculiar limitations and his distinctive strength. The specialist has at his command a knowledge and a skill which the general diagnostician and practitioner cannot rival. But the latter, if he is as competent in his line as the specialist is in his, can envisage the total situation far better than any specialist, however distinguished, and can protect the patient against the dangers of a too limited and restricted diagnosis. The specialist sees, as it were, a horizontal cross-section of the case; he brings his knowledge to bear upon the patient's present condition, and concentrates upon one or another aspect of this present state. The able practitioner, in contrast, knows the case in vertical perspective; he is able to interpret present symptoms in the light of the patient's entire history and in terms of his total condition. The contributions of the specialist and the practitioner thus complement one another. The men to fear in medicine are, on the one hand, the specialists who ignore the work of other specialists and who scorn the wisdom of the general diagnostician, and, on the other hand, the practitioners who fear to confess their lack of specialized knowledge. The men to trust are those specialists and non-specialists who are most keenly aware of the complexities of medicine, of their own inevitable limitations, and of the imperative need for incessant cooperation. In medicine, as in government, your motto must be, "*E pluribus unum*"—"United we stand, divided we fall."

But the art of medicine requires more than mere scientific skill, however specialized or however synoptic. It depends also upon a recognition of human values and human personality. For patients are not mere "cases"; they are human beings who turn to you, doctors and nurses, for human understanding and sympathy. The science of medicine, like all science, is a body of knowledge and a technique of intellectual inquiry. As such, it is, by definition, impersonal, dispassionate, and objective. The art of medicine, in contrast, is the humane application of this knowledge to the alleviation of human suffering and the promotion of human welfare. The *art* of medicine is, therefore, essentially personal and human, not coldly impersonal or scientifically dispassionate. It is concerned with human individuals, human hopes and fears. The importance of this fact can hardly be exaggerated.

It is one of the tragedies of medicine today that

the very complexities of modern science and of medical techniques tend so powerfully to accentuate the impersonality of medical treatment. Your great laboratories and gigantic hospitals, your complicated routines of consultation and diagnosis, the need for discipline, and the impersonal objectivity which necessarily characterizes all truly scientific inquiry, encourage a factory-like routine and a neglect of the human factor. But the patient, just because he is a human being, and because he comes to you in physical distress, craves not merely your scientific skill but your human understanding and sympathy. He is in trouble and afraid, afraid to hear your verdict, afraid to face whatever suffering may be in store for him. He wants to know the truth, however grim, yet fears the truth. He turns to you not only for your skill but also for friendliness and courage, sympathy and understanding. Can you remember this in the busy days and nights that lie ahead? Can you imaginatively identify yourselves with the patients, and, despite all routine and all weariness, respond to their human needs? Yours is a unique opportunity, as doctors and as nurses, to help your fellowmen in times of suffering and loneliness, anxiety and fear.

You will be able to measure up to this unparalleled responsibility only if you have within you great spiritual resources. The cure of bodies is an exhausting task. The comfort of the sick soul is far more exhausting and far more difficult. To fail here is excusable and tragic; to succeed here is to succeed indeed in the art of medicine. Here the essential requirement is a philosophy of life that you can live by and help others to live by. You need a religious anchorage so secure that you can preserve your own faith and courage in the face of suffering and death, and, in addition, instill your own assurance into the hearts and minds of those in pain and in the shadow of death. This will be the supreme task of your manhood and your womanhood, of your competence as human doctors and human nurses. If you fail here the world will still be grateful for your scientific and technical skill; but if you can combine this skill with love, courage and faith, you will be loved in return as it is given few men and women to be loved.

What I have said thus far concerns the art and science of medicine in time of peace. In time of war the dangers, the opportunities and the responsibilities of your profession are all increased—the dan-

gers of too much and of too little specialization, the dangers of regimentation and callous impersonality, the opportunities for the exercise of technical skill and human understanding, and the responsibilities which all these opportunities imply. In war the doctor and the nurse are the great non-belligerents, the great humanitarians. Friend and foe suffer alike, and medicine ministers to all suffering because it is human suffering. Whatever the rights and wrongs, the justice and injustice, in any war, all are agreed on the supreme value and indubitable rightness of medical aid to the wounded and the diseased. The graduation exercises of a medical school are always an important occasion; in time of war their importance is momentous because they signalize the arrival of new reinforcements where reinforcements are so sorely needed.

But what of the large issues now at stake—the issues over which this war is being fought? My own convictions on this score are those of an ever increasing majority of my fellow citizens, those repeatedly voiced by the President of our United States. Democracy, we believe, must and will survive, because the values which we all cherish—freedom of thought and action, of intellectual inquiry and creative effort, of human dignity which makes slavery an outrage and a curse—because these values are so essentially a part of the democratic spirit and way of life.

Those of you who analyze the present situation in this way will do your part with courage and assurance. To those of you who still have doubts, let me

suggest an application of the art of medicine to the wider arena of life. What does a doctor do in emergency? He decides and acts in the light of all available knowledge, even though he is perfectly aware that such knowledge is inconclusive and finite. No doctor ever acts on the basis of complete certainty; no doctor worthy of the name ignores such knowledge as is available. His action is always, of necessity, an act of reasonable faith. The belief of the quack is blind and credulous; the doctor who lacks all faith, all willingness to act in the absence of complete knowledge, will never act at all. The art of healing involves both faith and knowledge, as much knowledge as possible, and the courage to venture all on the basis of what is known.

This, I submit, is the procedure which all of us should follow in the present crisis. Many of the issues are indeed confused; our knowledge is indeed limited; the future is indeed uncertain. There are those who, as a result, counsel us to refrain from action, to wait, to watch, until Utopia is in sight. That way madness lies. It behooves us, in a time of crisis, to decide, as best we may, and to act boldly and resolutely in the light of this decision. Now is the time to summon up such faith and courage as is in us and to proceed, with a doctor's willingness to face all risks, along the road which lies ahead. You who are trained in the science and the art of medicine can provide us all with an example of reasoned assurance. I am confident that here too you will not fail us.

SPONTANEOUS HYPOGLYCEMIA IN CHILDHOOD.*

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and

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In electing to describe our very limited experience with spontaneous hypoglycemia in children it is not with the intention of discussing a rare clinical state but rather because we believe the condition to be far more common than one is led to believe. Within the past two and one-half years we have had the opportunity to observe six such cases which will be described at this time. Our pediatric service is not a large one but our experience suggests that it is not a

rare syndrome. Looking back over our cases we are confident that other fatal instances of this condition were not infrequently observed and were undiagnosed. No doubt others have had similar experience. The serious nature of such cases and the dramatic response to treatment in suitable instances, prompts us to make this report. Failure in the past to recognize and adequately treat severe and spontaneous hypoglycemia no doubt is the answer to some of the cases shown on hospital records as death from convulsions with cause unknown.

A discussion of this subject at this time seems

From Department of Pediatrics, Department of Medicine, University of Virginia.

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peculiarly appropriate. We refer to the pioneer work and subsequent contributions of Dr. Seale Harris.

In reviewing the literature on spontaneous hypoglycemia in children one is impressed with the scant mention of it in the usual sources of pediatric reference, and it is, therefore, not surprising that cases of this nature continue to go undiagnosed.

In a partial review of American literature many excellent discussions pertaining to this subject are found. In a fairly comprehensive review of American literature we were able to find thirty-odd reports of spontaneous hypoglycemia of childhood exclusive of those occurring in newborn infants. In only one instance was the condition associated with adenoma of the pancreas.

In commenting on the probable mechanism of the hypoglycemia in the recorded cases the conclusions of the various authors were in many instances of a speculative character due to the mild nature of many of the recorded cases and consequent lack of postmortem material. Prominent among the suggested etiological factors are hyperactivity of pancreatic islets, insufficient carbohydrate intake, infection and liver damage, endocrine imbalance, and organic disease of the brain. Significant postmortem findings include hyperplasia of the pancreatic islets, liver damage and lack of adequate glycogen storage, hemorrhage into the adrenal glands (newborns) and central nervous system changes.

Especial attention should be called to the usual degree of hypoglycemia that occurs at times in premature infants and full-term infants, particularly in those born of diabetic mothers. We are unable to report a single case of this nature and our experience is no doubt hidden under such misnomers as intracranial hemorrhage, congenital atelectasis, prematurity and unexplained infections of the newly-born. While routine blood sugar determinations are not a part of our nursery routine it is our custom to start oral administration of five per cent glucose shortly after delivery and to continue its administration until breast feeding or artificial feeding has become well established.

Case No. 132944 (Case I).—This three-year-old white child was admitted to the University Hospital July 8, 1937, with the complaint of convulsions and high fever of four hours' duration. Thirteen hours before admission she became quite fretful but no other unusual abnormalities were noted. Late on the morning of admission she became worse and had a

diarrheal stool. The mother thought the child was feverish. One hour later she again passed a diarrheal stool. The diarrhea continued until admission to the hospital. In the early afternoon of the same day the child had a convulsion which lasted for ten minutes, followed by coma. A local physician was called and on arrival found the child in another convulsion. Morphine and phenobarbital were administered. At this time the temperature was 105 degrees rectal. While on the way to the hospital the child had numerous slight convulsions and several generalized convulsions.

Physical examination revealed a well developed child of four years of age in a comatose condition. The skin was pale, hot and moist. Respirations were fast and jerky. Mucous membranes were pale. The sclerae were clear. Pupils were dilated and fixed. Examination of the lungs was negative except for large rhonchi. The pulse rate was 176. The usual reflexes were not elicited.

Lumbar puncture showed the fluid to be under no increase in pressure and the fluid was clear and colorless. Spinal fluid protein was not increased. There was an atypical reduction in Fehling's solution with eight drops of spinal fluid. The cell count was 2. The urine showed 2+ albumin, 4+ acetone, eight to ten white blood cells, an occasional red blood cell and granular casts. The carbon dioxide combining power was 35 volumes per cent and the blood sugar (venous) was so low that it was impossible to read it with ordinary standards.

Attempts were made to control the convulsions by magnesium sulphate intravenously and ether inhalations. Before glucose infusions could be given the child died.

The significant autopsy findings were as follows: *Adrenals*—Hemorrhage into both adrenal glands involving more of the cortex than the medulla, the left adrenal more than the right. The structure of each adrenal was not completely destroyed. *Liver*—Cloudy swelling. The liver cells contained an unusual amount of fat. *Pancreas*—No change noted.

It is reasonable to suppose that hemorrhage into the adrenal glands was the immediate cause of the hypoglycemia, but why the hemorrhage? The febrile course suggested unexplained infection. Hemorrhage into the adrenal glands of the newborn associated with hypoglycemia is not an unusual finding, but must be a very infrequent cause of hypoglycemia of older infants and children.

Case No. 140966 (Case II).—A seven-year-old white male was admitted to the University Hospital July 3, 1938. He was apparently in good health until four and one-half hours before admission at which time the mother heard the patient groaning and went in to see about him. At this time he complained that he could not stand and very quickly lapsed into unconsciousness. Clonic convulsive movements were noted, most marked on left side.

Physical examination on admission revealed a moderately well developed and nourished white male of seven years of age. He was comatose and having clonic convulsions mainly involving the left side. The skin was hot and dry. The mucous membranes were slightly cyanotic. The sclerae were moderately injected. The pupils were widely dilated, equal, and reacted very sluggishly to light. There were coarse nystagmoid movements to the left. The heart rate was rapid. The blood pressure was 148 over 80. The temperature was 104.8 degrees rectal. Respirations were labored and deep. Auscultation revealed a few coarse rhonchi over both lungs. The left leg and left arm exhibited marked clonic convulsive movements. The right arm and leg were moderately flaccid. The usual reflexes were present bilaterally but were markedly weaker on the left.

Lumbar puncture showed a clear fluid with no increase in pressure. There was no reduction with 2 cc. of fluid in Fehling's solution. The cell count was one lymphocyte. Carton dioxide combining power was 30 volumes per cent. The blood sugar (venous) was 24 mg. per 100 cc. of blood.

The convulsions were controlled with ether inhalations and small doses of magnesium sulphate hypodermically. In spite of infusions of glucose and Hartman's solution intravenously the patient remained in a comatose state and death occurred twenty hours after admission. Permission for autopsy was not granted.

The cause of the hypoglycemic state in this instance was not ascertained. The febrile state of the patient suggests that an undiagnosed infection may have been the essential etiological factor. In fact, it is not at all certain that hypoglycemia was directly concerned with the fatal outcome but rather a part of the moribund state. It is interesting to note that convulsions ceased after administration of glucose and sedatives, yet the patient remained in a comatose state.

Other references are found in the literature in

which patients with exceedingly low amounts of blood sugar continued to show symptoms referable to the central nervous system after adequate treatment with intravenous glucose. It is conceivable that excessive amounts of insulin acting over a period of hours may cause lasting damage to the central nervous system which cannot be corrected by the usual glucose therapy.

Case No. 141147 (Case III).—This two and one-half year old white female was admitted to the University Hospital July 10, 1938. She was apparently in good health until twelve o'clock noon, twelve hours before admission. At this time she became very irritable and vomited several times. She refused food but took fluids fairly well. In about four hours she became maniacal, would not walk and did not recognize her parents. She seemed feverish and pulled at her left ear. There were occasional twitchings of the extremities but no generalized convulsions. Food was not taken for thirteen and one-half hours before admission. About seven hours before admission her breathing became labored and deep. These symptoms increased gradually until admission. She became more violent and was seen by her local physician who gave her a hypodermic and recommended hospitalization.

Physical examination on admission revealed an acutely ill two and one-half year old white female. She was in a semicomatose state. Sweating was pronounced and respirations were deep and labored. Her mucous membranes were pale. The skin of the neck and upper frontal region showed moderate brownish pigmentation. Eyes showed converging strabismus and the right pupil was irregular. Both pupils reacted sluggishly to light and the corneal reflex was depressed. The fundi showed an engorgement of the veins. A few rhonchi were heard over both lung fields. Heart rate was fast and of poor quality. The temperature was 99.2 rectal. The respirations were 56. Both arms and legs showed coarse clonic movements. Knee and ankle jerks were equal and hyperactive. The Babinski reflex was questionably positive, more marked on the right. Kernig was negative.

Lumbar puncture revealed the fluid to be under no increased pressure, clear, and colorless with slightly increased protein. There was a reduction with 12 drops in Fehling's solution. Cell count was zero. Blood culture was negative. Blood sugar (venous) was 19 mg. per 100 cc., and carbon dioxide combin-

ing power was 21 volumes per cent.

The patient was given soda bicarbonate intravenously and this was immediately followed by 25 gm. glucose solution intravenously. Following this the patient had no more periods of apnea which had previously occurred about every thirty seconds. In addition she was given adrenalin which gave her temporary relief but she continued to have convulsions which gradually became more severe. The temperature gradually rose from 99.2 to 102.6 with pulse rate of 208. Glucose infusion was again given after five hours. The patient remained in a semicomatose condition and death occurred about eight hours after admission. Permission for autopsy was not granted.

Again we are unable to explain the cause of the existing hypoglycemia and to advance a satisfactory reason as to why glucose therapy was not effective.

Case No. 146445 (Case IV).—This twenty-two months-old white male infant was admitted to the University Hospital October 19, 1939, with the history of vomiting of eighteen hours' duration. Shortly before admission he became drowsy and could not be aroused. No history of infection was obtained. Past history was of particular importance in that he was seen at the University Hospital a few hours after birth with all the earmarks of intracranial hemorrhage. The child has never sat alone, walked or talked, and at times convulsive moments of both extremities have been noted.

Physical examination showed a well developed infant in a markedly comatose state. The temperature was 98 degrees rectal. The respirations were slow and deep in character. There were occasional twitchings of all four extremities and dorsiflexion of both feet. All extremities were somewhat rigid. The deep reflexes were sluggish. The pupils were equal and reacted normally to light. There was slight diverging strabismus of both eyes. The general appearance was that of a moribund infant.

Laboratory findings were as follows: Hemoglobin 84 per cent, Rbc 5,180,000 and Wbc 7,700. Blood smear was essentially normal. The Wassermann test was negative. Urinalysis twelve hours after admission showed 4+ acetone. Blood sugar (venous) on admission was 21 mg. per 100 cc. Carbon dioxide combining power was 36.9 volumes per cent.

Treatment consisted of 10 cc. of 50 per cent glucose intravenously, 5 m. of adrenalin and 5 per cent glucose given by intravenous drip. In addition 450 cc. of one-sixth molar sodium lactate was given

intraperitoneally. Improvement in the child's general condition was prompt although he continued to vomit for about eight hours. Eight hours after admission blood sugar (venous) was found to be 189 mg. per 100 cc. Six days after admission the child was discharged from the hospital in good condition.

Seven months later he was brought back to the hospital with a similar attack. The history at this admission was as follows: He appeared well until twelve hours before admission at which time he became restless and extremely thirsty. Three hours before admission it was noticed that he appeared drowsy and could be aroused only with difficulty. Several small convulsive seizures were observed by the mother. On admission to the hospital he appeared pale and was in a comatose state. Respirations were slow and deep. The usual reflexes were present but sluggish. Dorsiflexion of both feet was again observed. Temperature on admission was 96.4 degrees rectal. Again the general appearance was that of a moribund infant.

Laboratory examination was as follows: Hemoglobin was 81 per cent, Rbc 3,780,000 and Wbc 8,120. Blood smear was essentially negative. Urinalysis was normal. Blood sugar (venous) on admission was 26 mg. per 100 cc. and the carbon dioxide combining power was 37.6 volumes per cent.

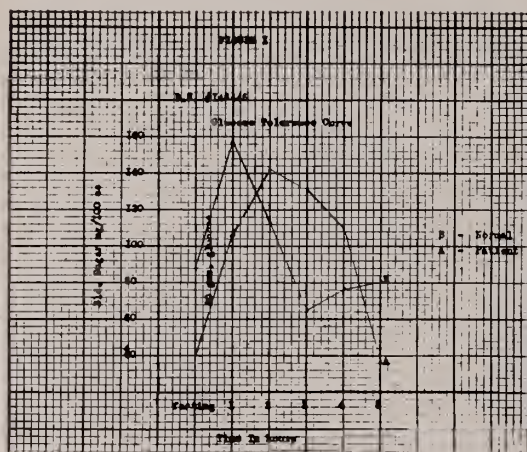
Treatment consisted of 20 cc. of 25 per cent glucose intravenously and 5 per cent glucose by intravenous drip. Immediately following the administration of glucose the child's color appeared better and drowsiness disappeared. One hour after initial glucose, blood sugar (capillary blood-micro method) was found to be 261 mg. per 100 cc. Five and one-half hours later the blood sugar was 135 mg. per 100 cc. and the patient appeared to have completely recovered. Five days after admission the patient was discharged from the hospital in good condition.

Two weeks after discharge from the hospital he was returned for interval examination. At this time blood sugar (capillary blood-micro method) was 107 mg. per 100 cc. and the mother stated that the child had appeared in good health.

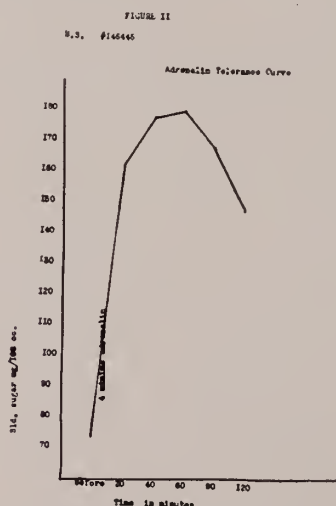
One week later he again was brought to the hospital with a history of having been well up until one-half hour before admission. Mother states he appeared pale and that his eyes rolled back and that she feared another "spell". She promptly gave the infant two tablespoons of Karo corn syrup. This was followed by immediate improvement. On question-

ing it was found that she had failed to give the usual sweetened orange juice. Blood sugar (capillary blood-micro method) at this time was 280 mg. per 100 cc.

The glucose tolerance curve at the time of an interval examination is shown in Figure I. The fasting level and five hour determination is compatible with this patient's hypoglycemia state.



Adrenalin response curve at the same interval examination shown in Figure II suggests no interference with glycogen mobilization during a symptom-free interval.



The recurring hypoglycemia state of this infant may perhaps be attributed to intracranial injury. Similar reports are not infrequent in the literature on this subject.

Case No. 158065 (Case V).—A three-year-old white male was admitted to the University Hospital May 15, 1940, with the history of having been in

good health up until 6 A. M.—four hours before admission. At this time he awoke, vomited and had a generalized convulsion. Vomiting and convulsions persisted at frequent intervals up until the time of admission. In the meantime he was seen by a local physician who made a diagnosis of pin worms and prescribed for these. The child continued to have convulsions and consequently was brought to the Hospital.

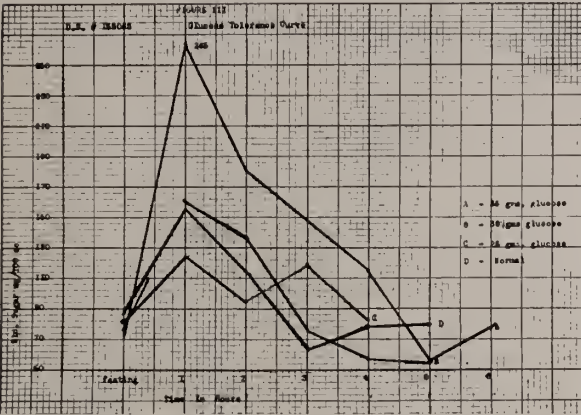
Physical examination on admission revealed a well developed and nourished three-year-old white boy with generalized convulsions and opisthotonos. Eyes were open and staring. There was foaming at the mouth. The skin was dry and doughy. The mucous membranes were markedly pale. Examination of the eyes showed the lids open, pupils dilated and fixed and reacting only very slightly to light. The corneal reflexes were absent. Both eardrums were dull and slightly injected. The upper front incisors were decayed and only the stumps were present. The throat was injected and the tonsils were enlarged and injected. The anterior cervical glands were enlarged. The respirations were slow and deep and coarse rhonchi were heard over both lung fields. All of the extremities were held in a rigid position and the knee jerks were hyperactive and equal. There was an unsustained bilateral ankle clonus. The temperature was 99.6 degrees rectal.

Blood examination revealed the hemoglobin to be 55 per cent, Rbc 4,160,000 and Wbc 9,200. Smear showed a shift to the left. Urine showed a 4+ acetone but was otherwise negative. Blood sugar (venous) was 35 mg. per 100 cc. and carbon dioxide combining power was 35 volumes per cent.

The patient was immediately given 4 min. adrenalin and 20 cc. of 25 per cent glucose intravenously. After about ten minutes the patient began to arouse and asked for water. After about twenty minutes he was perfectly rational and appeared normal in every respect. Intravenous drip of 5 per cent glucose was started and one-sixth sodium lactate solution was also administered. One and one-half hours after the administration of the initial dose of glucose the blood sugar was 224 mg. per 100 cc. of blood. After several hours the patient dropped into a rather heavy sleep from which he could be aroused and appeared rational when aroused. Vomiting stopped several hours after the blood sugar had become elevated.

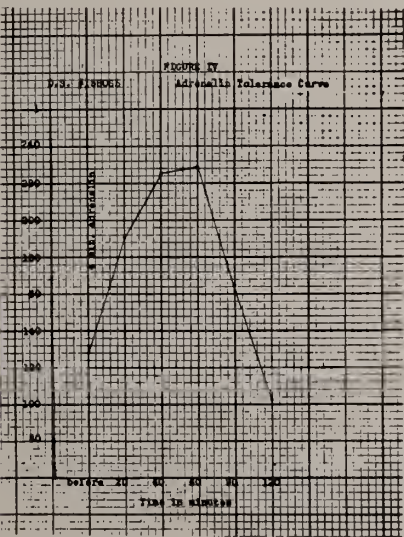
Six hours after administration the blood sugar was 74 mg. per 100 cc. of blood and the following morn-

ing it was 85 mg. per 100 cc. of blood. After twenty-four hours the Murphy drip was discontinued and the patient was put on regular diet and orange juice, oz. 6, q. 4 hours. Subsequent interval glucose toler-



ance curves (capillary blood-micro method) after administration of glucose are shown in Figure III. Adrenalin response is shown in Figure IV.

The response to intravenous glucose would seem sufficient proof to justify the conclusion that the symptoms present in this case were directly due to hypoglycemia. To date the child had not had further attacks and it is impossible to state where the breakdown in carbohydrate metabolism occurred.



Case No. 159232 (Case VI).—A four-year-old white male was admitted to the University Hospital June 28, 1940, with the history of having drunk about one-fourth pint of whiskey thirty-six hours before admission and having remained unconscious

since that time. There was no vomiting or convulsions. The temperature was 100.6 degrees rectal.

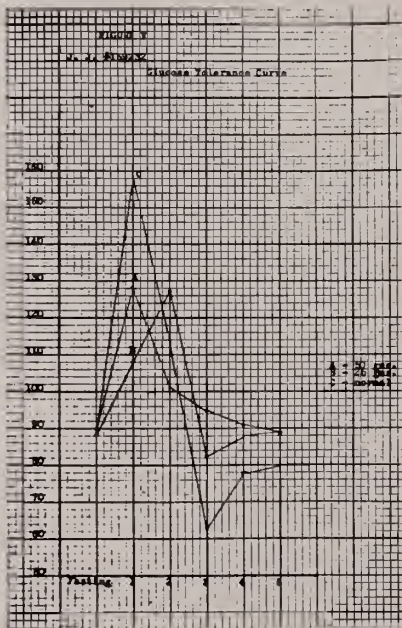
Physical examination on admission revealed a well developed and nourished four-year-old white male. He was unconscious, having loud noisy respirations, was slightly cyanotic and difficult to arouse. The skin was hot and dry. The mucous membranes were moderately cyanosed. Pupils were alternately dilated and constricted and reacted sluggishly to light. Sclerae and conjunctivae were slightly injected. Fundi were not visualized. Tongue showed a heavy whitish coating. Throat and tonsils were mildly injected. There were numerous large rales over both lung fields. The abdomen was scaphoid. The skin was somewhat doughy and of poor turgor. The liver edge was barely palpable. There was a small swelling about 2 cm. in diameter in the subcutaneous tissue at the middle of the mandible. There was a mild erythema of the skin over this area. There was soft tissue swelling about 3 cm. in diameter over the left hip. The skin was red and hot over this area. All reflexes were sluggish. A diagnosis of acute alcoholism, acidosis and hypoglycemia was made. Blood sugar (venous) was 28 mg. per 100 cc. Carbon dioxide combining power was 25.3 volumes per cent. Spinal fluid was negative.

After admission slight twitching of the hands and feet were noted. There were no signs of generalized convulsions. 960 cc. of one-sixth molar sodium lactate solution was given intravenously. At this time the report of the blood sugar was obtained and 20 cc. of 25 per cent glucose was given intravenously. About two minutes following this the patient roused and began asking for food and water. 2.5 per cent glucose intravenously was started at a slow rate. One and one-half hours after initial administration of glucose the blood sugar (venous) was 282 mg. per 100 cc. At this time the patient was rational and recognized his parents. It was noticed several hours after admission that there was a slight ptosis of the left lid, dilatation of the left pupil and weakness of the left medial rectus muscle. This was thought to be the result of a peripheral third nerve neuritis probably due to the alcohol. About six hours after admission the patient became markedly hyper-irritable with involuntary jerky movements at the slightest stimulant.

The patient was put on orange juice, oz. 8, with Karo every four hours and compresses were applied to the soft tissue swelling. The following morning

he appeared very drowsy and was hard to arouse. The blood sugar (venous) at this time was 58 mg. per 100 cc. Orange juice with Karo was gavaged and two and one-half hours later blood sugar (venous) was 245 mg. per 100 cc. The following morning blood sugar (venous) was 63.5 mg. per 100 cc. On the third day the temperature was 104.6 degrees rectal and examination revealed many fine rales over both lung fields. X-ray of the chest revealed a diffuse bronchitis. Wbc were 10,000 and blood sugar (venous) was 63.5 mg. per 100 cc. The patient was started on sulfanilamide therapy. The temperature continued to remain elevated, gradually returning to normal on the tenth day and remained so throughout the remainder of his stay. The peripheral neuritis gradually cleared up. Gavage had to be resorted to up until the ninth day at which time the tube was removed and from then on the patient took his feedings voluntarily. The bronchitis gradually cleared up and after the tenth day the patient appeared perfectly rational and wide-awake. The soft tissue swelling gradually subsided.

Glucose tolerance curve done on two occasions was as follows:



The curve representing the levels of sugar in the blood may be considered low when the sugar in the blood does not rise more than 40 mg. per cent above the fasting level. The type of curve in this instance is not conclusive of hypoglycemia and of no material aid in diagnosis.

The prompt response to intravenous glucose would appear to justify the conclusion that coma in this instance was the result of hypoglycemia and not due to the depressing effect of large amounts of alcohol. We know of no reports in medical literature in which acute alcoholism was associated with hypoglycemia. We are, however, of the opinion that alcohol was the immediate cause of the hypoglycemia noted in this instance. In support of this suggestion we record the following case inadequately studied from the standpoint of hypoglycemia. The similarity between the two cases is striking and the fact that the single recorded blood sugar determination was considerably below the usual normal reading even after glucose administration suggests that a very real hypoglycemic state may have been present.

A five-year-old colored female was admitted to the University of Virginia Hospital May 6, 1940, with a history of having been in good health up until thirty-six hours before admission. At this time she drank an unknown quantity of "moonshine" whiskey. About an hour following this the patient vomited, became irrational and violent and lapsed into coma at times. A short while later she began having generalized convulsions which lasted only for a short period but were repeated frequently. No food or water was taken from time of drinking whiskey up until admission. On admission the temperature was 99.4 degrees rectal.

Physical examination revealed a well developed but poorly nourished five-year-old colored female comatose but violent and irrational when aroused. Skin was dry with loss of turgor. Neck was voluntarily held stiff. Other than this physical examination was essentially normal. Urinalysis showed 3+ acetone, otherwise normal. Carbon dioxide combining power was 34.8 volumes per cent.

Patient was given 920 cc. of one-sixth molar sodium lactate solution intravenously. During the first day of hospitalization the patient remained comatose and was aroused only with difficulty. 750 cc. of five per cent glucose in normal saline was given intravenously on the morning following admission. Following this infusion blood sugar was 64 mg. per 100 cc. Patient continued somewhat drowsy during the second day. On the third day she became more responsive and began taking foods and fluids. She was discharged on the fifth hospital day in good condition (Case No. 110032).

We have attempted to produce hypoglycemia in

puppies by the administration of alcohol: Experiment I—To four of five puppies weighing approximately 750 gms. 25 per cent ethyl alcohol was administered by gavage in quantities sufficient to produce inability to walk or stand. Blood sugar determinations were made immediately before administration of alcohol and 48 hours after. No food was given between this period (see Chart I). Experiment II—Seventeen hour fasting blood sugar was determined. No food was given; alcohol given to three of five puppies on two occasions five hours apart in quantities described above. No food was given for a period of sixty-five hours or forty-eight hours after initial administration of alcohol. Blood sugar were determined at this time (see Chart I).

This procedure failed to produce in puppies a hypoglycemia which could not be explained by the prolonged fast.

RESPONSE TO GLUCOSE	
Immediate and marked -----	4
Slight -----	1
None -----	1
Glucose not given -----	1

The diagnosis of severe hypoglycemia is not difficult and can be made with surprising accuracy from the symptoms and signs alone even by those of limited experience. Failure to recognize such cases is the result of unfamiliarity with the clinical picture rather than to difficult details of diagnosis. It has been our experience that once an interne has had the opportunity to observe a severe case of hypoglycemia he is not apt to fail to make a proper diagnosis when the opportunity again presents itself. In every instance, however, the diagnosis must be verified, if possible, by fasting blood sugar determinations, five to six hour glucose tolerance curves and insulin

CHART I
BLOOD SUGAR DETERMINATION ON PUPPIES AFTER FASTING AND INGESTION OF ALCOHOL

EXPERIMENT I			
Puppies	1 hr. after feeding	Alcohol given	24 hr. fasting and 24 hrs. after alcohol 48 hr. fasting and 48 hrs. after alcohol
1	143 mg./100 cc.	Control	125 mg./100 cc. 77 mg./100 cc.
2	133	Treated	118 59
3	138	Treated	118 59
4	154	Treated	118 67
5	133	Treated	125 69

EXPERIMENT II			
Puppies	17 hr. fasting	Alcohol	48 hrs. after alcohol
1	105 mg./100 cc.	Control	65 hrs. fasting 61 mg./100 cc.
2	105	Treated	65
3	100	Treated	55
4	100	Treated	53
5	91	Control	63

Table No. I lists the symptoms and signs arranged in order of their frequency:

TABLE I	
Hypoglycemia -----	7
Acidosis -----	7
Coma -----	7
Convulsions -----	6
Sudden onset -----	6
Sluggish reaction of pupils to light -----	6
Cyanosis -----	4
Negative spinal fluid -----	4 (3 not done)
Vomiting -----	3
Elevated temperature -----	3
Dilated pupils -----	3
Slow and deep respirations -----	3
Labored and deep respirations -----	2
Jerky and deep respirations -----	2
History and signs of birth injury -----	2
Evidence of infection -----	2
Prolonged fasting period -----	0

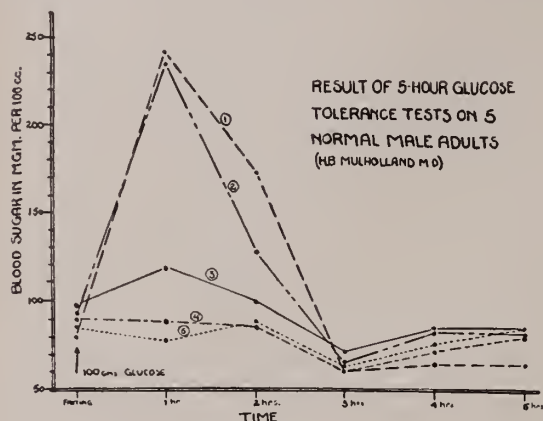
tolerance curves. Since our very limited experience includes, with a single exception, cases presenting themselves in a first and severe attack we have not had any personal experience with the insulin tolerance test.

The value of the five hour glucose tolerance curve in the diagnosis of spontaneous hypoglycemia may well be questioned and certainly it was of no great aid in the diagnosis of the cases here reported. It must be admitted that the normal limits for the five hour curve have not been well established. In Figure VI (courtesy of Dr. H. B. Mulholland) the five hour blood sugar levels in five apparently healthy medical students are described. The marked variation in the five curves is obvious.

Hart and Lisa* found that hypoglycemia (blood sugar below 80 mg.) occurred in 2,371 of 21,000 patients whose blood sugars were taken on a fasting stomach. Of these 751 fell below 70 mg. A few blood sugar values were as low as 28 mg. without shock. They suggest that normal individuals may have

**Endocrinology*, 27:1-160, July, 1940. Rate of Occurrence of Hypoglycemia: Study of 21,000 Routine Fasting Blood Sugars. J. F. Hart and J. R. Lisa, New York, p. 19.

occasional low blood sugar values with an otherwise normal blood sugar, and conclude that spontaneous hypoglycemia is not a common condition, or routine fasting blood sugars are not reliable guides to its occurrence.



One cannot afford to fail to make blood sugar determinations in any case of unexplained unconsciousness and persistent convulsions. Failure to promptly make such studies is certain to result in loss of life.

Far too frequently one can only speculate as to where the breakdown in carbohydrate metabolism occurs. It is reasonable to suppose that in many instances more than one etiological factor is operating to cause an existing hypoglycemia.

TREATMENT

There is a general uniformity of opinion concerning the treatment of severe spontaneous hypoglycemia. Treatment consists of oral and parenteral administration of glucose and in those cases where proper mobilization of glycogen is not occurring adrenalin is a valuable adjunct in therapy although its effects are only temporary. Where response to therapy occurs it is usually prompt and gratifying, the patient frequently being restored to consciousness within a few minutes' time. Not all cases, however, have this pleasant outcome as illustrated by the fatal cases here reported. The mere finding of hypoglycemia does not mean that it is necessarily the cause of the presenting symptoms.

There is less uniformity of opinion concerning the treatment of less severe and repeatedly occurring hypoglycemia. Certain cases obtain relief by merely increasing the intervals of feeding, others by supplementary feeding of small amounts of sugar. In true insulin sensitivity good results have been reported from the use of low carbohydrate-high fat diets. The occurrence of pancreatic tumor necessitating operation is fortunately rare in children. Hartmann† suggests that before subjecting children to such a procedure the following criteria be established: (1) "There should be proof of more or less persistent or frequently recurring hypoglycemia. (2) It should be shown that the symptoms expected to be relieved by surgery can be relieved by dextrose administration intravenously. (3) It should also be shown that the symptoms cannot be relieved by conservative measures of diet regulation (4) In the case of recurrent attacks of hypoglycemia with normal intervals between attacks, it should be shown that one is dealing with insulin intolerance or hypersensitive type."

SUMMARY

Six cases of spontaneous hypoglycemia are reported. The fact that two of the cases here reported died without showing the usual response to therapy serves to emphasize the occasional serious nature of the condition. This fact has not been given sufficient mention in the usual sources of pediatric reference and the suggestion is therefore made that such cases occur with greater frequency than is usually believed.

Attention is called to an apparent relationship between acute alcohol poisoning and hypoglycemia in one instance.

NOTE—Since this article was submitted for publication we have observed two additional fatal cases in which there was marked hypoglycemia. Postmortem findings in the one case which came to autopsy were: hyperplasia of islets of Langerhans, dehydration, slight atelectasis—bilateral and hyperplasia of lymphoid structures.

†Hartman and Jaudon, 1937—*J. Ped.*, 11:1-36—July, 1937.

THE EYE FINDINGS IN DIABETES.*

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I have nothing original to offer you today, but I think it might be interesting to review the eye changes in diabetes. This disease is of interest to us all, and its eye complications are rather frequent and very important. Often the eye complications constitute the first complaint of a diabetic patient; and it is through the recognition of their true nature that the presence of diabetes is first suspected. In preparing this material I was struck by the fact that the same question comes up with regard to almost every one of the complications: namely, whether the complication is caused directly by the diabetes itself by some toxin or some derangement of metabolism, or, on the other hand, is due only indirectly to diabetes which reduces resistance in general and allows some other direct cause to take hold.

Because of its high frequency and its damaging nature, the most important eye complication is that of the retinal lesions seen in diabetic patients—the so-called “diabetic retinopathy”. Here the question of the direct or indirect effects of the diabetes comes up with the greatest force. There is not time today to go into the arguments used, but suffice it to say there is, no doubt, much truth on either side. It is generally agreed that vascular damage can be found in the retinal vessels, if diligently enough sought for, in almost all cases of retinopathy associated with diabetes; and, further, that all sorts of senile and arteriosclerotic lesions are found in diabetes. But, clinically, there is one peculiar form of retinal lesion seen much more frequently in diabetic patients with arteriosclerosis than in non-diabetic patients with arteriosclerosis. It is necessary, then, to assume some connection between the diabetes and the type and distribution of arteriosclerotic lesion that accompanies it. This peculiar form of retinal lesion has come to be known as “diabetic retinopathy”. Hirschberg, in 1890, first described the retinal picture seen in diabetes and gave it the name *retinitis punctata centralis*. Here hemorrhages are an extremely common finding. These are usually small, deep-seated, and are situated away from the large vessels, indicating that seepage through dis-

eased vessel walls is the explanation for their formation. Where sepsis is present elsewhere in the body, in addition to the diabetes, extensive pre-retinal hemorrhages, or hemorrhages into the vitreous, may occur. These latter, strangely enough, usually occur where the diabetes is well-controlled. Needless to say they offer extreme prognosis, as eyes are usually lost where such hemorrhages take place. The exudates of diabetic retinopathy have a fairly characteristic appearance. They are small and circumscribed, and are shiny white in appearance with well-defined edges. Usually they occur in the central area, and often form a rough ring about the macula. This is quite different and easily distinguished from the well-known “macular star” of renal retinopathy. Like the hemorrhages, the exudates are inert and remain for long periods without undergoing visible change. Retinal edema is extremely rare in this condition, and retinal detachments do not occur. Pathological examination reveals no distinguishing features. Figures vary from 2 to 30 per cent as to the incidence of this complication in diabetic patients: a mean value of about 14 per cent being nearest correct. It is seen most frequently in old females and is very rare under the age of forty. There seems to be no relation between the occurrence and degree of the retinal lesions and the duration and severity of the diabetes, except that retinal lesions are rarely seen where the diabetic condition has not been present for at least three years. The symptoms depend on the site of the lesions. Where the macular is uninvolved by hemorrhages and exudates the vision is not impaired, and the lesions may be present for long periods without causing trouble; whereas, as soon as the macula is involved, the central vision is acutely reduced. Elimination of sepsis and careful control of the diabetes is essential. The presence of retinal lesions of this type does not entail the terrifying prognosis of renal retinopathy with regard to early death, for patients have been followed eight to ten years with it. But as a general rule prognosis as regard to vision is not good, for the changes tend to be progressive.

There is one retinal picture which is very characteristic of diabetes—that of *lipaemia retinalis*.

*Read before the Annual Clinic of the Norfolk County Medical Society, at Norfolk, Va., April 17, 1941.

Lipæmia is a condition in which the fat content of the blood is so greatly increased that it changes the appearance of the blood. It is present in a great number of conditions, such as diabetes, alcoholism, starvation, asphyxia, phosphorus poisoning, pneumonia, peritonitis, trench nephritis, and xanthomatosis. But, with the rare exception of leukaemia which has been treated with radiation, diabetes is the only one of the above diseases in which the condition becomes marked enough to be seen with the ophthalmoscope in the retinal vessels. This is the rarest eye complication of diabetes. It was first described in 1880 and since then only about fifty cases have appeared in the literature, 80 per cent of these occurring in females. It is seen usually in young people, being a rarity over the age of forty, and whenever seen the patient is approaching a state of coma. Clinically, the picture is unmistakable. The color of the fundus vessels becomes milky, first in the periphery, and this change progresses toward the disc. In the advanced stage the vessels become enlarged, flat, and ribbon-shaped, and they appear to be filled with milk. In some cases they have a yellow color and frequently there are yellow stripes along the vessels. The fundus takes a lighter color than normal, due to similar changes in the widespread vascular bed of the underlying choroid. The disc and fundi are otherwise normal. The retinal tissues are entirely normal in pathological section, except that the blood plasma in the retinal vessels is loaded with emulsified fat. This seeps into the perivascular spaces, thus giving rise to the yellow stripes mentioned above. Where this condition is found the patient is always very ill; though with the use of insulin the prognosis is now no worse than other cases of impending diabetic coma, whereas, before insulin was used, seventeen of the eighteen reported cases died suddenly of coma.

Transient blurring of vision in diabetic patients has long been known, but its true nature was not understood until Duke-Elder studied this subject in 1925 and stated that the refractive power of the lens varies directly as to the sugar content of the blood. That is, there is a tendency to hyperopia with decreased blood sugar, and, conversely, to myopia with increased blood sugar. This hypothesis has been well borne out in experience. Duke-Elder gave as his theory of the mechanism of this change in the refractive power of the lens, a change in the osmotic pressure of the aqueous concurrent with changes in

the blood sugar level, resulting in absorption of fluid by the lens with swelling and myopia in hyperglycemia; and the reverse process resulting in hyperopia with hypoglycemia. This complication has been reported as the first complaint of diabetic patients in as high as 34 per cent in one series. So the possible presence of diabetes must be kept in mind in all cases of sudden changes in refraction, and it is important not to prescribe glasses for these cases until the diabetic condition is well regulated, for only then will the refractive state become fixed and normal again.

It is known that diabetic patients are prone to develop cataracts. We find two separate types of cataract in diabetic patients. The first are in no way different from the ordinary senile cataract, except that they develop more frequently and at an earlier age in the diabetic than in the non-diabetic patient. According to Friedenwald, this is explained by virtue of the prematurity of diabetics in general. The second type of cataract is the true diabetic cataract. These occur in young patients, are associated with severe forms of diabetes, are bilateral, mature rapidly and have the characteristic subcapsular changes of secondary cataracts. At the onset one sees many vacuoles just beneath the capsule of the lens, with flaky opacities appearing between them. Then extensive hydration of the underlying cortex takes place, as is shown by water clefts and separation of the sutures. This goes on to a general swelling of the lens fibers until the lens is uniformly cloudy and opaque. There are many theories as to the cause underlying these changes. Some of these are: a degenerated state of the ciliary epithelium affecting the nutrition of the lens; toxic products of metabolism in diabetes; endocrine failure; and the photo-chemical theory. But, by far the most attractive theory, to my mind, is that of hydration of the lens secondary to change in the osmotic pressure in the aqueous. It is easy to conceive of this cataract formation as an end stage of the swelling of the lens in the myopic refractive changes described above. In very early stages of this hydration, adequate control of the diabetic condition may occasionally arrest the process and even result in disappearance of opacities. But, generally speaking, once the opacities have begun to form the process is rapid, and a mature cataract soon results. Here surgery is the only form of treatment. Although this does not entail a bad prognosis provided the diabetes is well-con-

trolled, it must be stated that cataract extraction in diabetic patients does provide greater anxiety than those in non-diabetic patients. The two most dreaded complications are occurrence of hemorrhage and post-operative infection. Every care must be taken to avoid these. Systematic and close search must be made for the presence of foci of infection, and hypertension must receive special care here. Having taken these precautions, one may expect good results from operation, provided, further, of course, there is no pre-existent damage to the back of the eye. The patient should be under the close care of an internist for several months prior to operation to assure proper control of the diabetic condition during that period, and dietary and insulin dosage should be regulated in the hospital where the operation is to be performed several days before it takes place. Here, again, the use of insulin has greatly changed the prognosis. With insulin and the care outlined above these patients enjoy the same good prognosis of other non-diabetic cataract patients, while before the use of insulin 30 to 40 per cent of these patients lost their eyes from infection following operation.

There are several very rare eye complications of diabetes about which I will say only a few words. First, I want to mention the changes in the uveal tract. In the older literature diabetic iritis is a frequent finding, but such an entity has almost disappeared. Today it is pretty generally agreed that the rather frequent occurrence of iritis in diabetic patients is very definitely a manifestation of the general low resistance to infection so characteristic of this disease. However, there is a change in the iris which is very characteristic of diabetes. This takes place in the pigment epithelium and consists of ac-

cumulation of fluid under this layer, separating it from the underlying non-pigmented epithelium and forming curious blisters or cysts in this area. The pigment granules may be liberated from the swollen cells and become deposited on the anterior surface of the iris and the lens. This may be recognized clinically with the aid of the slit lamp in a few cases, while it is pathognomonic and easily picked up in pathological section. Still another condition in this group is "rubeosis of the iris". This is a rare condition in which the iris of diabetic patients shows a peculiar non-inflammatory proliferation of vessels. Rubeosis is usually associated with glaucoma of an intractable nature.

Optic neuritis and ocular palsies in diabetic patients are thought to be part of the general peripheral neuritis so often seen in diabetes. Here, again, there is great argument as to whether this is due to diabetes *per se* or only indirectly by the general lowering of resistance to some other toxin. In optic neuritis the vision improves markedly, though not always completely, with treatment of the diabetes. In the palsies, all of the extraocular muscles have been affected, but palsy of one external rectus muscle is the most common lesion. The onset of these palsies is sudden and unlike the peripheral nerve involvements; it is painless. These usually clear completely with treatment of the diabetes.

In closing, I want just to mention the one ocular complication of diabetes with which we all became familiar as internes and which we used as an important diagnostic sign when dealing with unconscious patients seen on the Emergency Service: namely, the hypotony or softness of the eyeballs in diabetic coma.

Wainwright Building.

PULMONARY HEMORRHAGE IN TUBERCULOSIS AND THYLOQUINONE OR VITAMIN K.*

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and
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I know of no symptoms more distressing than to see a patient hemorrhaging from the mouth. We usually have to sit by helpless praying that the

bleeding will soon stop. As yet, no method has been devised, nor drug discovered, that offers immediate control.

Years ago it was considered good practice to administer a hypodermic of morphine; this seemed

*Read before the Norfolk County Medical Society, February 17, 1941.

to quiet the patient and check the cough, but in the end did more harm than good. It resulted in the blood settling in the lung, spreading the disease to other and healthy areas, often resulting in a tuberculous pneumonia.

Many preparations were put on the market, supposedly to hasten the clotting of blood; the author has tried them all from time to time, with disappointing results.

A few years ago when collapse therapy, in the form of pneumothorax, was first introduced, we thought we had an ideal treatment for pulmonary hemorrhage, but we soon learned that this form of therapy was applicable in only a small percentage of hemorrhage cases. First, it is not always easy to determine from which side the blood is coming. Secondly, if one could determine immediately which side was bleeding, in many instances the lung cannot be collapsed on account of pleural adhesions. Thirdly, one who is capable of collapsing the lung is not always available, so other and newer methods must be found.

The question naturally arises, what is the etiology of pulmonary hemorrhage. It is due either to acute congestion or rupture of a blood vessel in the diseased area of the lung. The extent of the hemorrhage usually depends upon the size of the vessel ruptured. This does not answer the question entirely; why does one person with tuberculosis bleed, and another does not. In a small percentage of cases, hemoptysis is the first noticeable symptom, while another case may have tuberculosis in an advanced form for years and not even streak.

The percentage of cases that hemorrhage in tuberculosis is a debatable one. It is the authors' feeling that from 50 to 60 per cent of all cases expectorate blood sometime during the course of the disease. Dr. J. B. Nichols, of Catawba Sanatorium, feels that 20 to 25 per cent of patients hemorrhage as much as a dram or more and that 50 to 60 per cent will streak sometime during the course of the disease (personal correspondence). Dr. Frank B. Stafford, of Blue Ridge Sanatorium, feels that 50 to 60 per cent is about correct. At Tidewater Memorial Hospital there have been 291 admissions since the institution opened; 80 of these cases hemorrhaged while there or gave a history of having expectorated blood (36.3 per cent). This is much lower than I expected. There were 101 deaths, five of which died from a pulmonary hemorrhage,

a fraction over 2 per cent, yet pulmonary hemorrhage is one of the most distressing symptoms of tuberculosis.

The question now arises, what is in the blood or make-up of the individual that does not bleed, which prevents him from bleeding, or what is lacking in the individual or blood of the patient that does hemorrhage. We will have to wait for the fertile mind of some biochemist to work this out. Phillip Jacobson recently suggested that many cases of spontaneous hemorrhage may be endocrine in origin; this remains to be proven¹.

Numerous articles have appeared in the literature in the past two years on the use of vitamin K in hemorrhage of biliary diseases and in hemorrhage of the new born, both prevention and control. I wondered if it might not be of some beneficial effect in pulmonary hemorrhage. I searched the literature but was unable to find a single article on the subject or where the drug had been tried. With this in mind, I wrote Squibb & Company for a supply of the new synthetic preparation, thyloquinone, for experimental cases in the Tidewater Memorial Hospital. They immediately sent me a large supply, free of charge. The result of this experiment will be reported to Squibb & Company. 2—Methyl—1, 4—Naphthoquinone, or Thyloquinone, is a synthetic preparation having the physiological properties of "Naturally Occurring Vitamin K" as previously reported in the studies of Dam and Schonheyder. They and others have demonstrated that vitamin K was a fat soluble constituent of green leafy plants, such as alfalfa, spinach and kale; it cures the anti-hemorrhagic diathesis caused by prothrombin deficiency.

Before using the drug, we decided to get the prothrombin time on a few cases of proven tuberculosis that had not hemorrhaged, to use somewhat as a control group; also, the prothrombin time on the hemorrhage cases before starting the drug. The laboratory work was done by the Misses Rawls and Stephens of the Doctors' Laboratory.

Technique: 2 cc. of venous blood was taken from the patient in a dry syringe and mixed with 1 cc. of sodium citrate, quietly agitated and taken to the laboratory. The test was always run within one to two hours after the blood was drawn, using the method of Howell.

Of the non-hemorrhage cases there were 16. Their prothrombin time varied from two to five minutes. Nine of these cases had a prothrombin time of four

minutes or below; only one of the non-hemorrhage cases had a prothrombin time of five minutes.

Of the hemorrhage cases there were thirteen. Their prothrombin time varied from four minutes to seven minutes. Nine of these had a prothrombin time of $4\frac{1}{2}$ minutes or above, thus revealing by this method there was a slight deficiency of prothrombin in the blood of the hemorrhage cases.

You will observe that only 7 cases were actually treated with thyloquinone; all of these were given bile salts at the same time. It has been stated that vitamin K will not be absorbed except in the presence of bile. There was no gastro-intestinal upset and no toxic symptoms noticed. So far as we could observe no beneficial effect was noticed on the hemorrhage. Of course, this is too small a series from which to draw any conclusion. We will continue to give the drug a trial and hope others will do likewise. The control of pulmonary hemorrhage by the use of vitamin K, thus far, is not very promising.

REPORT OF CASES

Name: Mr. J. R. M.

Age: 33 years. Sex—male. Weight—92 pounds.

Date of onset: January 12, 1938.

Red count: 3,860,000. White count: 11,700.

Hemoglobin: 68%. Clotting time: 4 minutes.

1940:

July 3—Blood taken for determination of prothrombin time.

5—Prothrombin time— $5\frac{1}{2}$ minutes.

6—Hemorrhaged 3 oz.—2 oz.— $1\frac{1}{2}$ oz.—1 oz.

8—Began thyloquinone 1 mg. with 3 procholol tablets t.i.d. for three days.

12—No toxic symptoms incident to thyloquinone.

15—Second prothrombin time determine—4 minutes.

Red count—4,650,000. White count—14,700.

Hemoglobin—80%. Clotting time— $3\frac{3}{4}$ minutes.

Nov. 13—Hemorrhage 2 oz.

Red count—4,340,000. White count—9,900.

Hemoglobin—70%. Clotting time—4 minutes.

Thyloquinone 1 mg. with 1 procholol tablet t.i.d.

14—Hemorrhaged 3 ounces.

Thyloquinone 1 mg. with 1 procholol tablet t.i.d. for three days.

17—No indications of toxic symptoms from thyloquinone.

24—Hemorrhaged 5 ounces.

Red count—4,820,000. White count—12,700.

Hemoglobin—70%. Clotting time— $4\frac{1}{2}$ minutes.

Thyloquinone 1 mg. with 1 procholol t.i.d. for three days.

No toxic symptoms.

No evident therapeutic effect of treatment.

25—Administered thyloquinone 1 mg. and 1 procholol

tablet t.i.d. for three days. No toxic symptoms.

Name: Mr. J. M. S., Jr.

Age: 29 years. Sex—male. Weight: $129\frac{1}{4}$ pounds.

Date of onset: November, 1930.

Red count: 5,010,000. White count: 8,400.

Hemoglobin: 80%. Clotting time: $3\frac{3}{4}$ minutes.

1940:

July 15—Hemorrhaged 2 ounces.

Prothrombin time— $3\frac{1}{2}$ minutes.

Thyloquinone 1 mg. with 1 procholol tablet a day for three days (increased to t.i.d.).

18—No toxic symptoms. No further appearance of blood.

No appreciable effect.

Name: Mrs. E. G.

Age: 39 years. Sex—female. Weight: $169\frac{1}{2}$ pounds.

Red count: 3,650,000. White count: 7,500.

Hemoglobin: 72%. Clotting time: $4\frac{3}{4}$ minutes.

1940:

July 1—Streaked.

2—Hemorrhaged 1 ounce.

3—Hemorrhaged 1 ounce—1 ounce.

4—Hemorrhaged $\frac{1}{2}$ ounce.

5—Hemorrhaged 3 ounces—4 ounces.

6—Hemorrhage 1 dr.

8—Prothrombin time—5 minutes.

8—Started on vitamin K and bile salts. 1 mg. thyloquinone and 1 procholol t.i.d. for three days.

11—No toxic symptoms from thyloquinone.

15—Prothrombin time— $4\frac{1}{2}$ minutes.

Red count—4,300,000. White count—11,000.

Hemoglobin—80%. Clotting time— $4\frac{3}{4}$ minutes.

22—Red count—4,410,000. White count—6,500.

Hemoglobin—80%. Clotting time—3 minutes.

Bleeding was abbreviated.

Name: Mrs. B. H.

Age: 52 years. Sex—female. Weight: 86 pounds.

Date of onset: During 1931.

July 8, 1940:

Red count—3,750,000. White count—8,100.

Hemoglobin—72%. Clotting time—4 minutes.

1940:

July 7—Hemorrhaged 3 ounces.

8—Prothrombin time— $4\frac{1}{2}$ minutes.

Began thyloquinone 1 mg. with 1 procholol tablet t.i.d. for three days.

15—Second prothrombin time—5 minutes.

15—Red count—4,450,000. White count—8,800.

Hemoglobin—78%. Clotting time—3 minutes.

22—Third prothrombin time— $4\frac{1}{2}$ minutes.

Red count—4,750,000. White count—7,600.

Hemoglobin—85%. Clotting time—3 minutes.

Aug. 4—Hemorrhaged $3\frac{1}{2}$ ounces—2 ounces.

5—Fourth prothrombin time— $4\frac{1}{2}$ minutes.

5—Red count—4,100,000. White count—8,800.

Hemoglobin—80%. Clotting time—3 minutes.

5—Administered thyloquinone 1 mg. with 1 pro-cholon tablet t.i.d. for three days.
 8—Fifth prothrombin time— $4\frac{1}{2}$ minutes.
 Red count—4,220,000. White count—8,500.
 Hemoglobin—83%. Clotting time—3 minutes.
 Sept. 17—Hemorrhaged 2 ounces—1 ounce.
 18—Hemorrhaged $1\frac{1}{2}$ ounces.
 19—Hemorrhaged 1 ounce.
 19—Prothrombin time— $4\frac{1}{2}$ minutes.
 19—Given thyloquinone 1 mg. with 1 pro-cholon tablet a day for three days.
 21—No untoward symptoms apparent from thylo-quinone.

Name: Mr. V. J. M.

Age: 30 years. Sex—male. Weight: 165 pounds.

Date of onset: June 17, 1933.

Red count—5,200,000. White count—8,700.

Hemoglobin—90%. Clotting time— $7\frac{1}{2}$ minutes.

1940:

Nov. 2—Began streaking heavily; continued through 3rd and 4th.

4—Prothrombin time— $6\frac{1}{2}$ minutes.

Thyloquinone 1 mg. with pro-cholon 1 tablet a day for three days.

5—Artificial pneumothorax began.

7—Heavy streaking checked after the third injection of air.

Name: J. T. (col.).

Age: 53 years. Sex—male. Weight: 110 pounds.

Date of onset: Spring of 1937.

Red count—4,580,000. White count—8,900.

Hemoglobin—80%. Clotting time—4 minutes.

1940:

Sept. 29—Hemorrhaged 3 ounces.

30—Prothrombin time—7 minutes.

30—Began thyloquinone 1 mg. with pro-cholon 1 tablet t.i.d. for three days.

30—Hemorrhaged 2 ounces.

Oct. 1—Hemorrhaged 2 ounces.

2—Hemorrhaged 3 ounces.

Treatment had no appreciable effect on hemorrhaging.

Name: Mr. T. V. J.

Age: 35 years. Sex—male. Weight: 100 pounds.

Date of onset: February, 1934.

Red count—4,900,000. White count—10,300.

Hemoglobin—87%. Clotting time— $2\frac{3}{4}$ minutes.

1940:

July 29—Hemorrhaged 2 ounces.

29—Prothrombin time— $4\frac{1}{2}$ minutes.

29—1 mg. thyloquinone with 1 pro-cholon tablet a day for three days.

Aug. 4—Hemorrhaged $\frac{1}{2}$ ounce.

5—Prothrombin time—5 minutes.

No toxic symptoms.

No appreciable effect.

Name: Mrs. K. B.

Age: 68 years. Sex—female. Weight: 175 pounds.

Date of onset: June, 1940.

Red count—5,600,000. White count—11,500.
 Hemoglobin—90%. Clotting time—7 minutes.
 1940:

Oct. 25—Began hemorrhaging— $\frac{1}{2}$ ounce.

26—Hemorrhaged— $\frac{1}{2}$ ounce.

27—Hemorrhaged— $\frac{1}{2}$ ounce.

28—Hemorrhaged— $\frac{1}{2}$ ounce.

28—Administered thyloquinone 1 mg. with 1 pro-cholon tablet a day for three days.

29—Hemorrhaged— $\frac{1}{2}$ ounce.

30—Hemorrhaged— $\frac{1}{2}$ ounce.

31—Hemorrhaged— $\frac{1}{2}$ ounce.

Nov. 1—Hemorrhaged— $\frac{1}{2}$ ounce.

2—Hemorrhaged— $\frac{1}{2}$ ounce.

3—Hemorrhaged— $\frac{1}{2}$ ounce.

4—Hemorrhaged— $\frac{1}{2}$ ounce.

4—Administered 1 thyloquinone with 1 pro-cholon t.i.d. for three days.

No results from thyloquinone.

Hemorrhage was checked by artificial pneumothorax.

In my opening remarks I mentioned we were helpless in hemorrhage cases. I do not want you to think we do not attempt to control the hemorrhage. Our method is as follows: As soon as a patient begins to expectorate blood, if he is not in bed, he is immediately put to bed in as comfortable a position as possible, preferably propped up on pillows at a 25 to 40 per cent angle disturbed as little as possible. We give some sedative, such as phenobarbital or bromides, endeavoring to quiet him. The patient is instructed to keep as quiet and as still as possible. An ice bag placed on the chest usually helps in this respect. Hemorrhage cases as a rule are highly nervous and very much disturbed. The nurse is instructed not to leave the patient any more than necessary and avoid crowding. One person should be in constant attendance while the patient is bleeding. Nature's process of controlling bleeding is the organization of a clot at the sight of the rupture; excessive coughing will disrupt this clot. Small doses of codeine or morphine should be given by the mouth to check excessive coughing, but not enough to abolish the cough reflex. I also give para-thyroid extract, 1 cc. hypodermically daily for three days and calcium by mouth. I do not believe this has any effect on large spontaneous hemorrhages, but has a very decided effect, at times, on those cases that bleed for several days. Occasionally one will find a bleeding case with an elevated blood pressure; this must be controlled either with nitroglycerine or large doses of barbiturates. I never use amyl nitrite, as I believe it does more harm than good. We keep the bowels open, preferably with salines, which helps

to deplete the vessels of fluids. Lastly, we resort to artificial pneumothorax where possible. In cases where the lung can be collapsed the hemorrhage usually is promptly controlled.

Often an ounce of prevention is worth pounds of cure. A large percentage of advanced tuberculous patients are confined to the house and chiefly in bed; they get practically no sunshine and eat an unbalanced diet. I wonder if feeding large quantities of citrus fruits, giving them an abundance of vitamin C, would help to prevent bleeding in a number of instances.

I am told that in our State sanatoria citrus fruits are withheld from the trays of hemorrhage cases for the reason they believe that a certain amount of citric acid will find its way in the blood stream as citrates and prolong the clotting time. Personally, I cannot subscribe to this therapy. Sailors used citrus fruits to stop bleeding from mucous membranes long before we knew anything about vitamins.

Mr. W. G. M., age 27, a bilateral case of tuberculosis, has been on the cure about three years, taking bilateral pneumothorax for about 2½ years. Both lungs are about 50 per cent collapsed; one would hardly expect him to hemorrhage. This young man is a bookkeeper. Long before he broke down with tuberculosis he worked in the basement, getting practically no sunshine. For the past year this man has been hemorrhaging about every four to six weeks—not a large hemorrhage but from heavy streaks to a dram or more, over a period of several days. It kept him and the family very much disturbed and caused me a good deal of anxiety. The first week in December, 1940, he began to expectorate blood in larger quantities than usual. He was given para-thyroid extract and calcium with no apparent result. He was then put on scorbutic acid, 50 mg. three times a day. His bleeding stopped in about 24 hours and he has not raised any blood since. At present he is taking 50 mg. twice a day and working.

In conclusion, I wish to state that, while we have tried vitamin K at the Tidewater Memorial Hospital in pulmonary hemorrhage cases, our results have not been encouraging. We expect to give it further trial and request that others do likewise and report their results. I also suggest that tuberculous patients be given an abundance of vitamin C in their diet in the form of citrus fruits and leafy vegetables to

see if this will not lower the percentage of hemorrhage cases.

I wish to thank Miss Eleanor Rawls and Miss Betsy Stephens for doing the prothrombin times on these cases, Dr. A. C. Ray, the Resident Physician, and Miss N. Bethea Craft and her staff of nurses for administering the drug and recording the results; and Squibb & Company for a liberal supply of the drug.

NOTE: Since reading this paper my attention was called to the article in the *Journal A. M. A.* by Dr. Henry C. Sweany and others of Chicago that supports the theory of a deficiency of vitamin C in tuberculous individuals.

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RÉSUMÉ OF DISCUSSION

I wish to re-emphasize one point of Dr. Harrell's paper. All equally diseased lungs do not bleed. To determine which lung will bleed and which will not is a very interesting and important piece of knowledge. The bleeding lung has a 25 per cent less chance of becoming a healed lung than the non-bleeding lung. Hence the importance of attempting to determine why some lungs bleed and some do not, so we may change the bleeding tendency if possible. At the moment we are attempting to determine the bleeding tendency by investigating the prothrombin time of the blood, and thereby the presence or absence of an adequate supply of vitamin K to the patient. Our greatest drawback has been that the result of the investigation in each case has not been a uniform rate of prothrombin time and a rate corresponding to the clinical condition. It shall be our effort in the future to determine the prothrombin time on each case as it is admitted, and from time to time to re-check the prothrombin time. With a comparison of the clinical status, we may determine the relation of the prothrombin time to the bleeding of the lung,

thereby determining the efficiency of any effort to eliminate the bleeders by means of synthetic vitamin K. We feel that if we may learn to convert the potential

bleeder into a non-bleeder, we may have made a very substantial contribution to the treatment of advanced pulmonary tuberculosis.—A.C.R.

POST SANATORIUM TREATMENT OF PULMONARY TUBERCULOSIS.*

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Before discussing the care and treatment of tuberculous patients after discharge from the Sanatorium, it would seem appropriate first to review the various procedures which are followed in starting the treatment with these cases while in the Sanatorium. The two objectives to be desired in the two places are the same, but the measures applied in carrying them out must of necessity be different. In the Sanatorium the necessary facilities are available for most all of the special types of treatment, such as, collapse therapy to be started. Also, important features, such as, discipline and training in prophylaxis of tuberculosis—applicable in both places—are available. The Sanatorium with limited space for patients, and usually faced with a long waiting list, cannot hope to keep patients until they recover from a disease which is as chronic in its course as tuberculosis, but must discharge them after a few months stay to return home and there complete the treatment. Thus it will be seen the importance of considering jointly the treatment of the disease in the two places—home and sanatorium.

As tuberculosis workers we are challenged now more than ever before in our attempt to control this disease. We are startled by the fact that one out of every three young women who die between the ages of twenty and thirty years continue to die from tuberculosis. It is interesting to note in this respect that 44 per cent of the patients admitted to Blue Ridge Sanatorium, exclusive of children on the Preventorium, are between the ages of fifteen and thirty years. So we plead and plead more fervently than ever for more hospital beds for the tuberculous in locations where there are not enough of them provided to meet the need. In Virginia we are fortunate in having about two available beds for the treatment of white patients for every death, but in the colored the ratio is much less and is inadequate.

In the campaign to eradicate the disease two prime objects must receive major consideration: first, the universal education of our people in regard to all phases of tuberculous disease; and secondly, the treatment of tuberculosis probably is the most essential factor which can be utilized in the control of this contagious disease. Until a short time ago many health authorities failed to realize that this was definitely a forward step in preventive medicine. The educational campaign, the case finding program, the early diagnostic campaign, the laboratory and X-ray, and many other activities have been of untold value. Nevertheless we cannot be very happy as to past results of this work since tuberculosis continues to kill more individuals in early adult life than any other disease, and, today in Virginia, stands second as a killer of our people, being surpassed only by pneumonia.

It is not only the death of those diseased which is embarrassing to us, but even more the ten other persons the individual may infect and who are in turn potential candidates to follow the same route.

Then we may say that at least a part of the solution of the problem would be to provide enough beds to hospitalize those so affected, and in addition to providing educational facilities in reference to the disease, and most important of all take immediate steps to render them non-infectious.

Regardless of whether tuberculosis is treated in a sanatorium or in the home, there are essentially three objectives to be accomplished if the best results are to be obtained. They are: (1) conversion of the sputum from positive to negative; (2) healing of the diseased process in the chest; (3) stopping tuberculous toxemia, thus enabling symptoms to subside, and as a result of this benefit the patient constitutionally.

It has long been known that a person with tubercle bacilli in the sputum is not only a public health

*Read as a part of a symposium on Tuberculosis before the Alexandria Medical Society, March 19, 1941.

menace, but is a source of danger to himself. The infection may be spread by aspiration to other parts of the lungs, or it may extend to distant organs, thus causing complications. Tuberculosis of the larynx and of the intestine, particularly the former, is almost invariably secondary to pulmonary involvement, and is the result of a positive sputum. One reference will illustrate this: a short time ago we had occasion to go through our records on 1,200 cases discharged, and we found that of the patients admitted to the sanatorium with tuberculous disease in the larynx, 97 per cent had tubercle bacilli in the sputum. In contrast, of those admitted over the same period without involvement in the larynx, only 54 per cent had tubercle bacilli in the sputum. With these facts confronting us, it would seem that the logical procedure to follow in the management of these cases would be, if possible, to convert the sputum at the earliest possible moment. This not only would benefit the patient, but would safeguard against infecting those with whom he may live and come in contact.

In the earlier years of treating tuberculosis, the patients were put at bed rest with the hope that the pulmonary disease would heal spontaneously, and the sputum would become negative. In fact, not so much attention was given to the sputum, but the results of the treatment were based mostly on the gain in weight, improvement in symptoms, and clearing of the moisture in the lungs as revealed by physical examination. Today our methods are somewhat different. If there are any short cuts in the treatment, the patients want and should have them. The socio-economic status must have due consideration. The sooner these patients can be restored to health and an earning capacity, the better it is for the family, the State, and the communities in which they live. There must be a greater turn over of the patients in the sanatorium in order to provide beds for those needing treatment without having to wait unduly long to be admitted. Therefore, we have resorted to a routine which expedites treatment and offers the patient a better chance for recovery. This we call collapse therapy, or the surgical treatment of tuberculosis. Unfortunately not all cases are suitable for it, nor does it seem necessary or advisable to use it on certain types of cases, as they will usually make a good recovery without it. In no sense should it be inferred that the collapse of the diseased lung is all that is needed for recovery—other measures are very

necessary and must be applied. *Surgery is a supplement to, and not a substitute for bed rest.* After the diseased part is properly collapsed, it does not mean that it is healed and ready for the patient to go back to work, or to do as he wishes. It means the diseased part, while still present, has been put at rest and placed in a better position to heal more quickly and more effectively if the other features of the treatment are properly carried out.

Various forms of surgery are used, and it is not always an easy matter to select the cases that are candidates for it, or to decide on the most suitable procedure for the individual case. Pneumothorax is the simplest and the most effectual procedure of any now in use, and it is our practice to try this first. If pleural adhesions are too dense and numerous to permit proper collapse, then we give serious consideration to the advisability of attempting something else, such as extrapleural pneumothorax, phrenic nerve operation, thoracoplasty, etc. Approximately 70 per cent of the patients admitted to this Sanatorium with definite tuberculosis are selected and tried on pneumothorax. With the aid of intrapleural pneumonolysis we succeed in satisfactorily collapsing about 55 per cent of these cases. "Open" cases, that is, those with tubercle bacilli in the sputum are mostly selected, provided they are otherwise suitable. The exception to this rule would be those with slight pulmonary disease and negative sputum, but, after a short period of observation on bed rest, the lesion on X-ray has not shown satisfactory improvement, or the symptoms have increased.

This departure from our former routine has given us gratifying results. Last fiscal year only 6.6 per cent of our patients at the time of discharge had tubercle bacilli in their sputa as compared to 34 per cent on discharge ten years ago. The percentage is about as low as can be hoped for because there will always be a group of obstreperous and homesick patients with positive sputa who will not stay in an institution long enough for conversion of the sputum, and who will be a public health menace wherever they may be. Also, there is a group of hopelessly advanced cases with positive sputum for which nothing can be done, and obviously they cannot be kept in the sanatorium indefinitely when more suitable cases are waiting to be admitted.

In reference to home treatment, it may be said that most of the measures started in the sanatorium

should be continued after discharge. In addition to admission and intermediate reports, our policy at the Sanatorium is to give the physician who sent the patient to us a full discharge report, and to advise the patient to return to that physician. This report includes chest findings on discharge, results of treatment, and suggestions for after care and treatment of the case. Through this procedure conflicts on home treatment are avoided between family physician and well-meaning friends and relatives of the patients. All cases taking treatment at home should be under the care of a physician, and routine visits to the patient's home should be made by him. This is just as important as it would be for the physician to see regularly a chronic cardiac case. It is true tuberculous patients need very few drugs, but the psychological effect on the case of seeing the physician regularly is very stimulating and quite beneficial. Physical examinations and medical supervision are also essential to the health and safety of the patient and should be continued for years after the strict treatment for the disease has ceased.

If pneumothorax has been started while in the sanatorium, there will be available in most every part of the State a qualified physician who can administer refills so that patients may continue with this collapse therapy. At the present time, according to the report of the Director of the Tuberculosis Out-Patient Service of the State Department of Health, there are fifty-six such stations over the State, and 510 patients are receiving treatment from this source.

Some system should be adopted for routine sputum examinations. Perhaps for the average case under home treatment, once every two months would be sufficient. It should be remembered, however, that the sputum findings are not entirely reliable in known cases of tuberculosis, because one can never tell just when some condition may arise which will cause it to become positive again when it had on several occasions previously been reported as being negative. In this way it may give a patient a false sense of security, and perhaps cause a relaxation of precautions and probably endanger the lives of the other members of the family. The patient should understand that the safest procedure to follow is to be careful at all times, regardless of the report from the sputum examinations.

A routine schedule of bed rest, including both physical and mental relaxation is very necessary, but

is often quite difficult to enforce due to the various disturbing factors which may develop in the home. This can be minimized if the family understands and cooperates with the physician and nurse in carrying out the prescribed schedule.

Written instructions as to the time to be spent in bed and when visiting is to be permitted will assist those charged with maintaining discipline. An afternoon "quiet period" of at least two hours, preferably between two and four, should be observed. During this time there should be no visiting with the patient, and the house should be gotten as quiet as possible and anything else avoided which is apt to be disturbing. Meals should be served regularly, but like many other details it need not interfere with the routine in the home. If there are children, the ever-present danger of infecting them exists. A hard and fast rule to make is that children must not come into the patient's room, or in contact in any other way with the patient.

Diet, while not as important as rest, must be given due consideration in outlining the course of treatment. It is no longer necessary, or considered advisable to force feed or "stuff" the tuberculous patient. The diet should be appetizing, well balanced, high in vitamin content, and should contain sufficient calories for the patient to show a steady gain in weight. Obesity, however, is no longer a prerequisite for recovery. Our aim is to get the patient up to standard weight, and then regulate the caloric intake so that the weight will be maintained without further gain. Our records show that 80 per cent of the patients coming to the Sanatorium have "indigestion", or digestive disturbances in one form or another. Therefore, it is necessary to have in addition to the regular menu, a list of special diets to be used for those cases requiring it.

The question of when walking exercise should be started is an individual problem, and should be decided primarily on the merits of the case. A good general rule to follow is to permit no exercise until all symptoms which denote activity have been absent for at least two months. When exercise is permitted, it should be a very gradual process indeed, and increased only after being convinced that it is doing no harm and is being well tolerated by the patient.

There are numerous other important features in home treatment of tuberculosis which might be discussed here, but time will not permit. It may be

said in conclusion that regardless of the time and effort put forth on the part of the doctor and nurse, and the schedule prescribed, the results are not going to be satisfactory in certain types of cases due to lack of cooperation on the part of the patients. The

successful treatment depends in a large measure on the intelligence of the patient and his or her willingness to obey instructions. Someone has aptly said: "The successful treatment of tuberculosis is three-fourths above the collar bone."

CHANGES CAUSED BY CEREBELLAR NEOPLASMS IN THE ELECTROENCEPHALOGRAM

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During recent years an advance in Neurology and Psychiatry has been the application of a vacuum tube, condenser coupled amplifying system known as the electroencephalograph, to the detection of electrical activity from within the skull. This instrument picks up voltage in the order of millionths, amplifies it and records either on bromide paper or ordinary folded paper, depending on whether mirror or ink-writing oscillographs are used.

In this early, but intensive, stage of investigation with the instrument certain characteristics have been found which delineate normal neuronal activity from

(beta waves). These waves are prominent in the parietal and frontal regions. See figure 1.

The above description is somewhat classic because each individual has his peculiar pattern. Nevertheless, those waves are to be contrasted with abnormal neuronal activity. There have been evolved three criteria for determining abnormal "brain waves". These are (1) frequencies being slower or faster than normal; (2) voltages being greater than normal; (3) a combination of these two. Epilepsy, a disease which has been widely studied, produces during grand mal seizures, waves which are faster and of

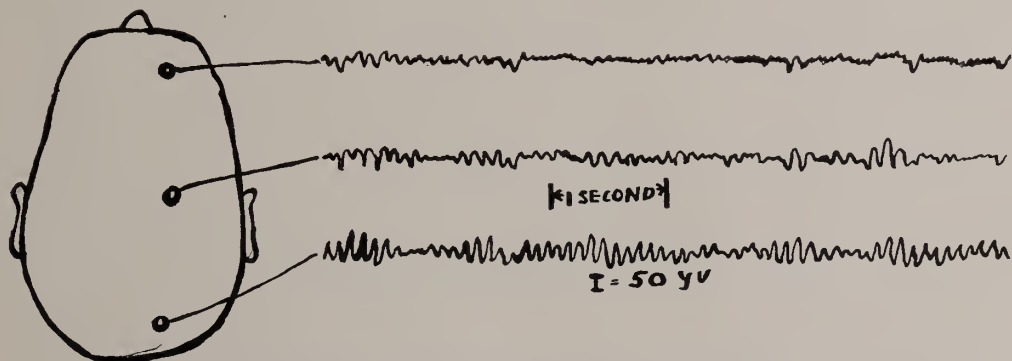


Fig. 1.—Normal tracing. Fast frequencies from the frontal lead. The parietal shows both fast frequencies and waves of the alpha type. The occipital lead shows alpha waves and the "Berger" rhythm.

abnormal. With the patient at rest and eyes closed, the usual, normal tracing may be described as follows: from the occipital region sinusoidal waves appear at a frequency of 8 to 14 a second and 50 to 60/1,000,000ths volt (μ v) maximum (alpha waves). Opening the eyes will cause the waves to disappear. They tend to arise in clusters, having a crescendo-diminuendo effect. As the electrodes are moved anteriorly, these waves tend to disappear, being supplanted by faster frequencies, 15 to 40 a second and 15 to 30/1,000,000ths volt maximum

greater voltage than normal while during petit mal attacks slower than normal and faster than normal wave alternate. Both types of waves are of very high voltages. Tumors, scar tissues, and cysts produce no measurable bioelectric activity themselves, but because of disturbing the functions of the cells about them, abnormally slow, high potential waves arise on their margins. This feature of neoplastic growths in cortical areas is used to demonstrate their size as well as their location.

These descriptions have been worked out for

lesions and disturbances of the cortex. This is to be expected as the electrodes are placed on the scalp, not in areas within the skull. Experimental and clinical investigations of deep structures are relatively few from an electroencephalographic standpoint. Smith, Walter and Laidlaw in 1940 reported tracings taken from eight extracortical tumors, six of these being cerebellar. They found changes in the occipital region and suggested they were "the result of secondary damage to the occipital lobes produced by pressure exerted by the lesions upward through the tentorium". Their electrodes were applied to the scalp, not to deeper tissues as might be inferred.

The following report is based on two cerebellar neoplasms which were suspected from changes found in the occipital poles by the electroencephalograph. They were studied after operation by this instrument.

CASE 1. Colored male, age 11, was admitted to the University of Virginia Hospital with the complaint of headache for three years. For several months prior to admission he staggered in walking and had occasional attacks of vomiting. His psychomotor activity had become greatly retarded.

Wassermann and Kahn negative; ventricular fluid, hemocytology and urinalysis normal. Skull plates showed separated sutures and blunting of the clinoid processes. Ventriculogram demonstrated a very large internal hydrocephalus.

At operation by Dr. J. M. Meredith, an atypical medulloblastoma which arose in the mid-line and extended into the left cerebellar hemisphere was found. Following as complete removal as possible, he was given 5,850 R units of X-ray through three channels to the posterior portion of his head.

CASE 2. Colored female, age 9, was noticed to have a staggering gait for a year prior to hospital admission. She developed occipital headaches, and as these symptoms progressed she would vomit with the headaches.

Examination revealed a well developed and nourished colored girl; the head was considered large; cranial nerves were normal except the optic which showed 1 to 2 diopters of choking; no pathological reflexes; hyporeflexia; suboccipital tenderness; staggering gait; cerebellar tests of the extremities done poorly; romberg positive; nystagmus to right and left.

Wassermann and Kahn negative; urinalysis normal; ventricular protein 10 mgm.; X-ray showed the suture lines to be wider than normal and the digital markings to be increased.

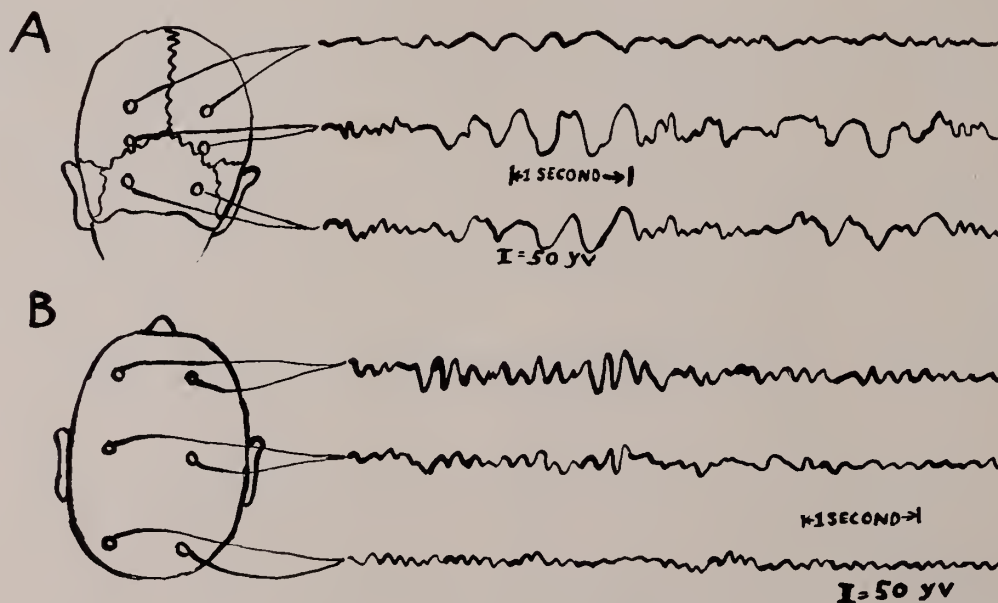


Fig. 2a and 2b.—See text for explanation.

Examination revealed a well developed and nourished colored boy; circumference of head 58 cm.; exophthalmus in both eyes; pupils dilated; right disc blurred, left had distinct margins; retinal veins were engorged and tortuous; no nystagmus; other cranial nerves normal; all reflexes were equal and active; no pathological reflexes; gait ataxic; romberg positive; slight adiodokinesis; ataxia in finger to nose test; visual fields restricted.

At operation Dr. Meredith found a cyst the size of a duck's egg in the right cerebellar hemisphere. In the lumen of the cyst, which protruded into the fourth ventricle, there was a hemangioblastoma. To date the child has received 3,000 R units of X-ray to the posterior portion of her skull.

Electroencephalograms in Case 1, taken prior to operation, show the greatest changes (highest poten-

tial and slowest waves) 5 to 6 cm. above the inion. These recordings were made with the electrodes in a frontal plane and were the composite bioelectric activity of both sides (bipolar recordings). As the electrodes were moved downward or upward from this area, the potentials became less, indicating they were being moved away from the point of maximum voltage. Figure 2a.

Twenty-four days following operation another tracing was made. Figure 2b. This showed almost normal alpha activity in the occipital region but in the frontal region there arose groups of large slow waves which had not been present. This indicates

A tracing made fifty-eight days after operation showed irregular 3 to 7 a second waves of 100 yv maximum amplitude in the occipital region. From the parietal region there arose fairly regular 5 to 7 a second of 50 to 100 yv maximum amplitude. The frontal region showed about the same fast frequencies and a few 5 to 7 a second waves. These large slow waves originated, on careful examination, from each parietal region, 17 cm. above the inion. The change represented in this post-operative tracing, with faster synchronization and lower voltage is toward more normal activity but indicates damage to the cortical cells. Figure 3b.

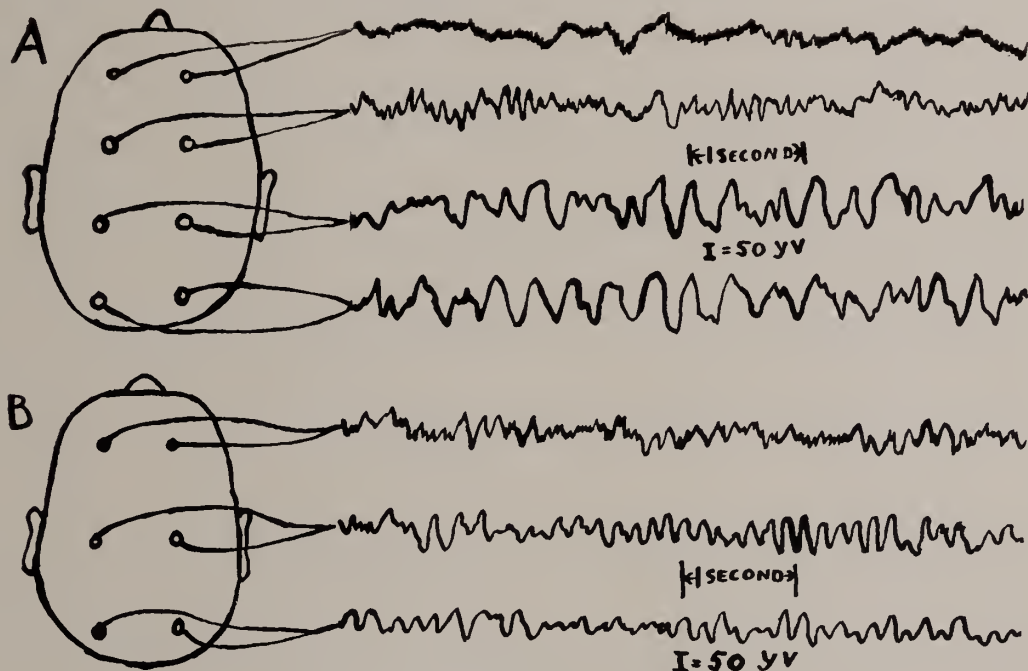


Fig. 3a and 3b.—See text for explanation.

damage in the area, possibly the residuum of the internal hydrocephalus.

Case 2 was studied more thoroughly. Measuring over the vertex from the inion to the bridge of the nose, the distance was 42 cm. Leads were placed in the frontal plane as in the first case and the greatest abnormalities were seen 7 cm. above the inion. At 14 cm. above the inion there was slight diminution in voltage; at 22 cm. the frequencies were faster and lower in potential and at 32 cm. fast frequencies were pronounced. Figure 3a. In order to locate as precisely as possible the area of maximum potential, triangulation was resorted to, which placed it 7 cm. above and 2 cm. to the left of the mid line, from the inion.

COMMENT

When the spherical spread of such electrical waves are taken into consideration it can not be stated from the tracings whether the source of this abnormal bioelectric activity is in the cerebellum or occipital lobes. In Figure 3a it may be seen that, although there is a difference of 7 cm. between the occipital and the next higher pair of electrodes, there is definite, yet little difference between the curves. This is due, in all probability, to two factors. One is the spherical shape of the skull. The other is dependent on this. If the origin of the abnormal activity is deep seated the radii to both pair of electrodes are about the same. Finding the point of maximum potentials in-

icates the shortest radius to the source of abnormality.

One might suppose from these considerations that geometric analysis or scaling of the potentials as they diminish with distance from the origin of the activity would give this position away. The problem and proof is not so simple.

In the cases of Smith, Walter and Laidlaw there was no change in the slow waves that could be attributed to opening the eyes, which ordinarily abolishes alpha activity. There was slight attenuation of these slow waves but they promptly returned to their former configuration. The alpha activity which was present was affected to a greater degree. Although their brain stem tumors gave bioelectric changes in occipital leads, there is a report by W. G. Walter of a diencephalic and hypothalamic tumor which did not do this. The changes reported were those of sleep and it is possible that such potentials could obscure any localized changes.

That the changes are not due to increased intra-

cranial pressure alone is shown by the fact that other causes for increased pressure do not cause occipital abnormalities. It would seem that the intracranial hypertension has a damaging effect on the cortex. In both post-operative tracings there are areas away from the occiput which show abnormal potentials and frequencies. In the cases reported here they have been present two months, in those reported by Smith, Walter and Laidlaw six months.

The question would seem to be open as to whether the changes noted on the electroencephalogram are due to changes in the occipital lobes or cerebellum. When abnormalities as described, occur in the occiput they certainly raise the question of cerebellar neoplasm.

SUMMARY

Two cases of posterior fossa neoplasm with their pre- and post-operative tracings are presented. These tracings are suggestive but not diagnostic of cerebellar neoplasms.

THE PROBLEM OF THE PSYCHOPATHIC PERSONALITY IN THE FEEBLE-MINDED INSTITUTION.*

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The title of this paper is "The Problem of the Psychopathic Personality in the Feeble-minded Institution", but, for the purpose of my discussion, I am going to confine myself specifically to the very real problems presented by that type of psychopathic personality that we call the "constitutional psychopath".

Like any other institution caring for the mentally ill, we have in our patient population at least one or two examples of every known type of psychopathic personality, ranging from the intensely irritating paranoid psychopathic personality of the so-called typical epileptic deterioration, to the pathetic psychopathic inferiority. But no one of these psychopathic personalities presents as many or as grave problems as the "constitutional psychopath".

I must confess that it is with some fear and trembling that I present this term to describe a specific type of individual. In the past it has been used more

or less as a "shotgun" diagnosis to describe a person who was not normal, but who none the less could not be classified under any of the standard diagnoses. Nevertheless, we feel that the term has a definite place in the nomenclature; that far from describing any and all vague mental complaints, it should be used (as we used it at the Lynchburg State Colony) to define a specific type of mental disorder. And it is in an attempt to make clear the syndrome presented by our "constitutional psychopath" that this paper is written.

About one hundred years or so ago—or maybe much further back—the term "moral imbecile" was coined to describe certain people who were not insane, epileptic, or feeble-minded, but who were non-conformists to the extent that they could not possibly be considered normal mentally.

Somewhat later the "moral imbecile" was replaced by the "constitutional psychopath"—and by many other ponderous, descriptive terms.

*Read before the Neuropsychiatric Society of Virginia at its winter meeting in Richmond, January 29, 1941.

But nowhere can one find two definitions of the term "constitutional psychopath" that are identical, and it would seem that almost no two psychiatrists view the term in exactly the same light.

For instance, a couple of weeks ago, I attended a seminar that was held in Washington for the psychiatrists who were to advise the local Selective Service Boards. Inevitably the question of the advisability of inducting into the Army those men who might variously be described as "moral imbeciles", "psychopathic criminals", "recidivists", etc., was raised. Dr. Paul Schroeder stated that a recent survey of the penitentiaries in the United States revealed the fact that the authorities of one institution classified 90 per cent of their criminals as constitutional psychopaths, while the authorities of another penitentiary stated that only 3 per cent of their prisoners were constitutional psychopaths. The other penitentiaries gave percentages ranging somewhere between those two widely divergent figures. From this it is easy to see that the interpretation of the syndrome represented by the term "constitutional psychopath" has been anything but rigid. Certainly the criminal population of the penitentiaries of two different states cannot actually be that different.

At this same seminar Dr. Simons asked Dr. Hall—who was conducting the meeting in question—to tell the psychiatrists assembled there what they, in turn, must tell their local boards about the constitutional psychopath. He asked that, in a nutshell, they be told what to look for so that they might easily recognize the constitutional psychopath. Dr. Hall gave his definition of the term; then called upon four or five more nationally known psychiatrists. Each one's definition varied in certain vital points. Finally, Dr. Sullivan was asked to express himself. He made little attempt to outline the syndrome, but told the psychiatrists that in the long run the diagnosis must be made from the history of the patient.

At the Lynchburg State Colony we call a patient a constitutional psychopath only if:

1. His intelligence quotient as measured by a standard psychological scale or battery is at least 70 per cent; his mental age at least ten years; in short, he cannot be regarded as feeble-minded *per se*. At this point I should like to mention the fact that the Army has recently gone on record as stating that any man whose mental age is at least ten years (and

who is otherwise sound) will be acceptable for military training.

2. He has demonstrated by his conduct in the past that he respects neither the personal nor the property rights of others.

3. He has shown—again by his past conduct—a subconscious immutable fixity of purpose to compel society to conform to his wishes. It is noteworthy that there is no systematic chain of delusions.

4. He has shown—again his history is the informant—that while he can exercise fair judgment and reasoning on the immediate, he can never view a problem on a long-range scale. That is, for example, while he may be uncommonly clever in the execution of a theft, he will never see what the ultimate result of his act might be either to himself or to others. He simply cannot see that he must bear his share of social responsibility.

5. He has exhibited an intense hypersubjectivity—a selfishness that excludes any consideration, even for those who should be dearest to him by reason of kinship or friendship.

6. He is not classifiable as epileptic or insane, and his syndrome is not the result of mental disease or trauma.

I am now going to read you thumbnail sketches taken from the records of six of our constitutional psychopaths—these have been picked at random from the fifty or sixty of these individuals that have been sent us in the past several years.

CASE NO. 1: B. S. Admitted to the Colony July 17, 1930. B's Father was a borderline case of mental deficiency; his Mother was intensely neurotic. B was the only child—all his life he had been badly pampered and spoiled. So far as we could ascertain, he had received no real discipline. His Father had spanked him once, but had apparently felt thereafter that he should never again raise his hand against his child. In short, B's heredity and environment were both bad. When he came to the Colony he was only eight; but he had already committed many misdemeanors: he had sold his parents' furniture to a junk dealer (while they were away from home); he had even managed to abstract a couple of dollars from the pocketbook of the secretary of the psychiatrist who was examining him—without either the doctor or the secretary being aware of the theft. He had been expelled from school as utterly incorrigible. Although the diagnosis of constitutional psychopathic inferior personality had been

made at one of the State's leading private sanatoriums, B was sent to the Colony as feeble-minded. Mental examination revealed that the boy had an intelligence quotient of at least 95 per cent—his personality, however, fitted our interpretation of "constitutional psychopath" to a "T". He was glib, quick, markedly egotistical, and just about as fresh a young'un as one could hope to see. He stayed with us for five years. During that time he never caused any serious trouble—because he was too closely watched! But he was forever creating disturbances among the other patients, and he would leave the Colony with the speed of a frightened jack rabbit if given the slightest opportunity. He certainly did not belong at the Colony and when Mr. S. requested permission to remove him, expressing certainty as to his ability to control B, we discharged B. Since then, I have been told, he has been in the Courts on many occasions. He has been a patient at the Eastern State Hospital, and he is now in the Criminal Insane Department of the Southwestern State Hospital!

CASE NO. 2: F. S. (no kin, by the way, to B. S.) was admitted to the Lynchburg State Colony on the 15th of March, 1939. F came, so far as we could learn, from a middle class home of the average urban type. There was no record of mental disease or defect among his relatives. He had attended school, very irregularly (as he told us, he was more interested in play than in education) for some ten years and had never progressed further than the third grade. When he was sent to us at the age of 18 he had already been in jail eleven times, in the Industrial School three times; once at one of the State hospitals for a period of observation. The committing authorities sent F to us as feeble-minded—they could not believe that anyone could possibly give so much trouble and not be feeble-minded! On mental examination at the Colony, however, we found that he had a mental age of eleven years. While he was with us—and as long as he was under the closest sort of personal supervision from his attendant—he gave no real trouble: once the attendant's vigilance was relaxed, however, F would be off like a shot. He played third-base on our softball team and did a splendid job of it. He was a likable, friendly sort of chap—so long as that attitude best served his purpose! Finally, he made good his escape from the Colony; shortly afterward he was arrested in

North Carolina for stealing automobiles; he was convicted in the Federal Court and is now serving a three-year term at Chillicothe.

CASE NO. 3: F. H. Admitted to the Colony on the 13th of February, 1937. F's Father was alcoholic and syphilitic; his mother was mentally deficient; we have one of F's younger brothers (feeble-minded) at the Colony—six other siblings of F's are said to be subnormal mentally. However, in early childhood F was taken from his own home and was placed in a good foster home in one of the rural counties. He was raised by thoroughly good foster-parents. F gave his foster-parents much worry by his refusal to apply himself at school. As he grew older he became gradually more unmanageable; and when he finally became aggressively interested in small children of the opposite sex his foster-parents had him committed to the Colony. On examination we found that he was of about dull average intelligence. We felt that something might be done with him, and we put him to work in our central office as an office-boy. For a short time he did quite well; then one evening he stole the keys to the psychologist's car. That night he, and another boy whom he inveigled into accompanying him, went to Lynchburg to Mr. Buck's home, confidently expecting to be able to abscond with his car. But to his chagrin, F found that the car he had hoped to steal was locked in the garage and he couldn't get it. F had the good fortune (for him) to find a car across the street parked with the motor running! F drove that car to Amherst where it broke down. Under pretence of wanting to buy a second-hand car, he persuaded an automobile dealer in Amherst to permit him to try out a car—he drove that auto to Alexandria, where it, too, failed him. He then stole a third car: he was arrested in Maryland while driving that. F was tried, convicted, and sent to the State Farm. After he had completed his 18-months sentence there, he was released. He promptly stole several more cars, and led the police a merry chase from one end of Virginia to the other before they finally caught him. At one time he actually went so far as to return to the Colony and steal a set of license plates from the car of one of our staff physicians. F is now serving a long term in the penitentiary.

CASE NO. 4: G. P. Admitted to the Colony on the 20th of July, 1940. G's Mother was a woman of better than average intelligence and background.

She had graduated with honors from an outstanding woman's college after majoring successfully in music. G's Father—a most eccentric man—was a successful tailor. G's Mother divorced his Father, when G was but a small boy, on the grounds of cruelty. G's Mother died when G was but nine, and the rest of his early adolescence was spent in one foster-home after another. He reached the fourth grade in school. He was in constant difficulty with the school authorities, and others, from his early teens onward. When we got him, he was 26 years of age. He had been in a mental hospital under observation. He had been at the Industrial School; and had been jailed several times. He came to us from the State Farm. They sent him to us, not because they thought him feeble-minded, but because they felt he should not be at large and they didn't know where else to send him. He had lived all up and down the Eastern Seaboard. He had never had any trouble getting a job, for he made a rather good impression; and he had never had any trouble holding a job until he either stole something or his homosexual tendencies got the better of him—as they frequently did—and he made advances. On mental examination, we found out that he could not possibly be considered feeble-minded; on the contrary, he had about average intelligence. But his personality was very badly warped. He said with sullen pride, "They never *caught* me in the act of committing sodomy." He frankly confessed to a taste for fellatio and spoke of it as a "habit". After G had been here a short while we told him that he didn't belong here; that we would discharge him. He begged so piteously to be allowed to spend the winter here, that we agreed to permit him to stay. We put him to work in our dairy barn. Our herdsman reported that he could not ask for a better hand. G, however, as we found out afterward, was harboring a bitter grudge against the State because of a whipping he had received at the State Farm. He reasoned that if he destroyed something at the Colony, he would thereby secure revenge against the State. So he repaid our kindnesses to him many fold by setting fire to our larger dairy barn and doing damage to the tune of ten thousand dollars! We turned G over to the Amherst County authorities. He was tried in Amherst Circuit Court, convicted of arson, and sentenced to ten years. And—poetic justice—he is now back at the State Farm that he so despised.

CASE NO. 5: B. B. Admitted to the Colony on the 10th of April, 1937. B's family history is essentially negative. Her father owns one of the better farms in one of the Southside Counties. Her raising was good. B reached the sixth grade in school after six years' attendance. At the onset of puberty, she began to give trouble. Her family soon found it quite impossible to keep up with her—not unnaturally they felt she *must* be feeble-minded (else she could hardly be so thoroughly uninhibited and friendly), and they sent her to us when she was 15. Fortunately she had escaped pregnancy. Mental examination revealed a mental age of above 12 years; she had many grave personality flaws. After she had been sterilized we permitted her (at her family's request) to leave on parole. She was returned in the next few days, however. She has now been with us almost continuously for the past 45 months. During that period she has had to be disciplined for various infractions of the rules no less than 43 times!

CASE NO. 6: M. H. Admitted September 20, 1940. M's Father left her Mother when M was very small. M was raised by her grandparents. They did the best they could for her, but they were never able to control her well. M reached the third year in high school; she was always a rather good student. She was in difficulty, though, from her early 'teens onward. She was finally expelled from high school because of her sexual promiscuity. Soon thereafter she married a man who was feeble-minded. For a while this seemed to mark a turning point in M's life. She seemed contented to support her husband, and she got into no more trouble until she became pregnant and had to leave work. She then promptly abandoned the new leaf to which she had turned. She appealed to the welfare agencies and was given money and supplies by them; but when they found she was using the money to pay her way into the movies and selling the supplies they furnished her, they soon withdrew their aid. She then took to begging, even from negro churches, and finally she took to forgery. When she was sent to us by the Court, she stood indicted on seven distinct charges of forgery. We found that she had a mental age of better than 13½ years. She made an excellent first impression; she was quick, alert, and quite willing to admit her guilt—once she was certain the examiner knew all about her. She stated (in clas-

sical fashion) that she had learned her lesson; that never again would she sin; but at no time did she exhibit any real penitence or any real understanding of the possible punishment that faced her. She was in trouble of one sort or another the entire time she was here. We returned M to the Court for trial. The Court saw fit to release her with a suspended sentence. I am sure that we have not heard the last of her!

These six patients are good examples of what we call a "constitutional psychopath". Though their cases differ in certain respects, each qualified as a constitutional psychopath under the six essential points I outlined before.

If one were to take a composite photograph of all the male constitutional psychopaths and another of all the female constitutional psychopaths that we have ever had, he would have photographs of a couple who might easily pass as Mr. and Mrs. Average American. In other words, as a rule, there is absolutely nothing in the external appearance of the constitutional psychopath that gives a hint to what is going on underneath.

But, you will ask, what makes the constitutional psychopath what he is. It is dangerous to generalize, but if one were to compile statistics on the history of all constitutional psychopaths he would find that the majority of them (there are exceptions to this rule, of course) had poor heredity, or poor environment, or both. By "poor environment" I do not mean *material* poverty as much as *cultural* poverty. Only too often, I believe, these people have no respect for the rights of others because their parents before them had no respect for law and order. Then, too, if, when they were children, they could not respect their own parents, whom, as adults, might they respect. Only too frequently, their fathers have been drunkards and thieves, their mothers prostitutes and sots; their homes have been homes in name alone.

Some of the constitutional psychopaths, having no real standards to follow and often seeing their own parents flout the customs of the land finally grow to believe that only fools will conform. Others, though the parental example is of the best, soon become exasperated at their failure to succeed by normal methods and conclude that the modes and customs of society are silly. And, in any event, being definitely weak personalities to begin with, they soon become sorely frustrated individuals. The restric-

tions of society become unseen fetters to them—fetters, however, that must be broken lest their egos suffer a defeat that they cannot admit; there is nothing for them to do, as they see it, but wage active combat with the rest of the world. Unable to admit the possibility of defeat, they cannot sense the inevitability of ultimate apprehension and punishment when they embark upon a course of strict non-conformity.

When caught they will cheerfully admit their guilt—if, as they usually do—they shrewdly sense that by doing so they are the more likely to be dealt with leniently. Like the chronic alcoholic, they will beg for "one more last chance"—but unlike the alcoholic, they apparently can never feel, even momentarily, anything akin to real penitence: their only desire is a chance to try it again, vowing that this time they will not be caught. Never for a moment do they feel that anything that happens may have been the result of anything but blind luck upon the part of the enemy, society.

In their persistence at non-conformity they resemble the post-encephalitic behavior problem patients: but the crime of the true constitutional psychopath is not as impish, senseless or impulsive as that of the post-encephalitic. The constitutional psychopath will usually exercise considerable skill in his efforts; they will be the result of reasoning, and the misdeed will usually be more in line with what one would expect of one of this intelligence level.

He is often committed as feeble-minded by the physician inexperienced in mental cases because the physician cannot understand how anyone could do what the patient has done and not be feeble-minded: and then, to top it off, so to speak, be so supremely self-confident. Actually, of course, that "self-confidence" is nothing but a protective armor that the patient has donned. He'll never let the world know that it has him down.

But the fact remains that patients of this type *are* sent to us and far too often. They do not belong to us; they are not feeble-minded; and there is not a thing that we can do to help them. They are a continual source of trouble—they do not declare an armistice in their fight with society simply because we have them in custody. On the contrary they take a particular delight in attempting to proselyte our lower-grade, essentially benign patients, to whom they are glamorous individuals. The constitutional psychopath is forever trying to get away from the

Colony himself—but, not content with that, he will almost always take some other patient (or patients) with him.

We cheerfully concede that the constitutional psychopath belongs in an institution—but why pick on the Lynchburg State Colony?

At the moment, there is no institution in Virginia, either mental or penal, to which he really does belong. I believe that the State could save itself no end of time, money, and trouble, if it would build an institution of the farm colony type to which these constitutional psychopaths could be sent for an indeterminate period. Such a farm colony could be nearly self-supporting, and it could certainly be made a fairly attractive place. If we are to keep these people permanently out of society, it is only fair that we permit them to lead as nearly normal lives as possible while they are in custody. Some will say, "Oh, yes, that's all very well, but what if someone is simply railroaded into such a Colony." That such a thing might happen is, of course, quite possible—but anyone *not* a constitutional psychopath should not have much difficulty convincing the Colony's resident psychiatrist of that fact.

We are agreed, I think, that these people must be kept out of society. But they must also be kept out of the hospitals for the insane and the hospitals for the feeble-minded and epileptic where they do untold harm. The sooner a farm colony is erected for the constitutional psychopaths and for them exclusively, the sounder many of us will sleep.

DISCUSSION

DR. D. C. WILSON, Charlottesville: This paper of Dr. Arnold's is most comprehensive and delightful in its arrangement, as well as in presentation. This paper is a sequel to that of Dr. Blalock given before this Society at Virginia Beach. Dr. Arnold's definition cannot be improved, but the problem before us is not so much one of definition, but of finding a dynamic approach to the problem that will lead to some sort of practical solution.

Eugene Kahn, writing approximately twelve years ago, distinguished the psychopath by means of a quantitative lack at each level of integration. Certainly the psychopath has a lack of development which makes his inability to get along, but the knowledge of this lack has not helped us so far in our effort to solve the problem. Karpman approaches the problem from the analytical standpoint, and claims to have cured such patients by this method. He urges that the category "Psychopathic Personality" be eliminated, as these individuals are not essentially of one class, but fit into many other types of disorder. There is also a tendency among analysts to shift the burden of the fixation in this type of disorder

from the mouth to the anus; certainly a major change in approach, but not one that will help us much in the practical handling of the numerous psychopaths.

Curran's work reported before the State Mental Hygiene Society last fall offers more than anything produced in some time. The report of his follow-up is out, and also an analysis of his work by Schilder has been published. He claims 67 per cent well after four years, and this after only four weeks stay in the ward at Bellevue. By means of their individual psychotherapy they seem to give insight to their patients and then by group psychotherapy they induce a respect for authority, as well as a desire for a new mode of living, a marvelous accomplishment that undoubtedly should be the aim of all similar forms of treatment. If we are to treat psychopaths in Virginia, we should pattern our therapy after that of Curran and our set-up after that of Bellevue. There is no place in Virginia that approaches this at present. I believe the time is near at hand when such a ward will be organized at one of our State hospitals.

Finally, it would be well for us to follow Pennsylvania, and establish a Fellowship which would allow a psychiatrist to make a special study of crime, thus becoming a penal-psychiatrist, or a penologist and a psychiatrist. A man so trained would be able to give much constructive advice in the solution of the problem of the psychopathic personality.

DR. J. S. DEJARNETTE, Staunton: I have been listening to these dictionary addresses and have heard a lot about the dictionary. As I have listened to the questions discussed this evening, Dr. Alderman is called an expert on the dictionary, and I think he should get out one and give us some new terms we can understand.

Dr. Arnold's paper in regard to the Constitutional Psychopath is a good one. I read an article four or five years ago from the Medical Society in Minnesota in which the psychiatrists kicked the word Constitutional Psychopath out of their vocabulary. The word does not mean what it implies, as in the case of the old negro when he saw an elephant, "thar's no such animal." The name, Constitutional Psychopath, implies a disease of the soul or mind. If a man has a diseased mind he is insane. If you call him a psychopath he is not insane. The word is derived from two Greek words, Psyche the soul and Patho the disease, literally meaning diseased soul. Psychopaths are not insane and should not be given a name implying insanity. They frequently go to an insane hospital, and when found not to be insane they are occasionally sent home or to the feeble-minded colony. In one case Dr. Arnold received a patient and later turned him out as not insane. He was presented to the court and the court promptly sent him to the State Farm.

Dr. Wilson says some of the doctors have been curing 60 per cent of their Constitutional Psychopaths. That is a constitutional insane person, which does not sound plausible to me, and I doubt if Dr. Wilson thinks it can be done. He quotes from someone who claims to have cured 60 per cent. I believe we should get a better

name, something with a true meaning of what the patient has.

Many of these cases that are called Constitutional Psychopaths are children who are reared by indulgent parents and are given all sorts of liberties, not corrected, and taught obedience or the responsibility of life. Some are mild manic depressive, and some dementia praecox. Such cases are really insane and should be called insane. To rear children without proper control or teaching them obedience and self-denial is a dangerous thing.

"No dream of Childhood's early day
No storm that raged, no thought that ran,
But leaves its impress on the clay
That slowly hardens into man."

Most of us have evil thoughts, but none of us like to think about the evil things we have thought and done, but we are delighted to boast of our good deeds, etc.

As stated above, the so-called psychopaths are not insane and should not come in contact with the insane patients. The people we have been putting in this class should be diagnosed as manic depressive or dementia praecox, as the case may be. I hope we will use this expression, Constitutional Psychopath, less and less and not at all where the patient is not actually insane.

Criminals who are repeaters and shown they are not able to adjust themselves to their environment properly should be confined, not so much by the gravity of the crime, but for their tendency to repeat their crimes in which they are liable to do violence to people on whom they prey and liable to hurt themselves in their attempted crimes. Such cases should be confined for long periods on their past history. Dr. Arnold's suggestion is a good one: confine them for a good long time, sterilize them and turn them out.

DR. J. R. BLALOCK, Marion: I do not feel that home training in childhood has so much to do with the development of the psychopathic personality or the constitutional psychopath. Hubbard wrote an excellent article many years ago in which she compared the symptoms in psychoneurotic children with those in psychopathic children. The latter were self-centered, egotistical, as hard as nails, and did not profit by experience. It has been the general experience that these symptoms develop in children from good homes as well as from bad ones; that in both of these types of homes you find factors, causes of conflict, etc., giving rise to a great many personality disorders in children, to neuroses, or even subsequent psychoses.

I believe that the classification of the American Psychiatric Association dealing with psychopathic personality is as good as any. The distinction is made between psychopathic personality with psychosis on the one hand, and without psychosis, psychopathic personality on the other. Of the group without psychosis there are listed three groups: pathological sexuality, pathological emotionality, and with asocial and amoral trends. These are the three big groups of the psychopaths who are not psychotic. And as regards those who are psychotic, there are those who have psychotic episodes who may be fundamentally schizophrenic.

I believe that Henderson and Gillespie's definition is

as good as there is. In a way it is about the same as Dr. Arnold's, and states that a psychopath is one who from childhood or infancy has shown certain exaggerations of personality features which have gotten him into difficulty with his environment, but who is not certifiable as insane, and who is not essentially feeble-minded; also having a tendency to develop psychotic episodes. I think this definition is as good as one can find. In 1939 Henderson published a book, "Psychopathic States" (Norton)—an excellent study. Kahn discusses psychopathic personality in terms of temperament, impulse and character, and presents a very elaborate classification, not easily understood, but well worth study.

As regards differential diagnosis, I think the problem of who is feeble-minded, and the distinction between that and one who is psychopathic is not difficult. However, simple dementia praecox presents a difficulty at times, and certain criminal types present difficulty. In the Criminal Insane Department at the Southwestern State Hospital we get a number, over twenty per cent of admissions, who are psychopaths, occasionally with psychosis, but more largely without. And of course we have the problem of reporting them back to the court. I think generally that the ordinary psychopath is reported back to the court as sane if his condition is shown as without psychosis. I have long wanted to make a survey and see what the practice is in different institutions for the criminal insane, in the matter of the legal responsibility of the certain types of the psychopaths received for observation and report.

I wish to thank Dr. Arnold for his very interesting and instructive paper.

DR. B. R. TUCKER, Richmond: I never heard Dr. Arnold read a paper that I didn't think very highly of it, and that I didn't get something out of it, something definite.

I don't know whether I have the temerity to suggest an additional criteria I have noted in connection with these people, because I have always been interested in disturbances in conduct—in myself and in others.

Every person whom I have found constitutionally psychopathic has exhibited the symptoms of romanticizing, fantasizing, and lying, and it seems to me that these are outstanding things with these people. I think really, broadly speaking, that we are dealing here with two conditions rather than with one. I think there is such a thing as a constitutional psychopath, and such a thing as an environmental psychopath. Now, in the constitutional psychopath it doesn't make any difference whether he is disciplined or not; it doesn't matter what his training has been. They come out of the best families and are well raised—many of them.

The environmental conduct individual—irregular conduct—whether he is psychopathic or not, can be cured by thorough treatment over a long-enough period of time. It seems to me we have two conditions that ought to be dealt with separately when we are dealing with individual cases. In my own small experience I have never known a real constitutional psychopath who has been cured by any method, and I'll stick to that till

somebody shows me where I am wrong. The environmental psychopaths, those who have been raised improperly—those who have had improper suggestions throughout their lives—can be cured, of course, provided time enough is given and they are under the proper influences and in charge of understanding individuals. I have two right now whose environments were splendid, and these two are just as Dr. Arnold described. They fit in with everything that Dr. Arnold said except, as I said, the ones I consider real constitutional psychopaths have exhibited the romanticizing, fantasizing and lying. The intelligence, of course, has little to do with either one. One of these cases made quite a reputation as a female newspaper reporter, though not sticking long to this—not sticking long to anything, as a matter of fact. The other one knows more about the battles of the World War—though he was nothing but a child at the time—the generals who commanded the troops, and the number of troops, than any commentator I have ever heard; and he has read more books than almost anybody I know. He reads books, but he cannot apply them properly, and his judgment is all wrong.

Now, the question whether these people are insane or not is another proposition. I think the real constitutional psychopath is a person who has in his genes and protoplasm such a strain that he should be considered insane. A person who has been raised improperly, and whose environment has led him into inflections of various kinds, need not be insane.

That is about all I have to say, except I would like to get Dr. Arnold's idea as to his experience with these people in their lying and fantasizing.

DR. P. G. HAMLIN, Newport News: I would like to

ask Dr. Arnold what he feels is the measure of legal responsibility concerning these people. He spoke of sending them back to the court, and the court then sentencing them to the state road camp or something like that. I would like to ask him whether he feels that this accomplishes anything; whether it does any good.

The question of terminology I think is not important. The type was described a hundred years ago by Prichard, and later by Maudsley, and, as Dr. Blalock said, still later by Henderson in the Salmon Lectures. He (Henderson) classifies them under psychopathic states.

DR. JAMES N. WILLIAMS, Richmond: Dr. Arnold's paper is extremely interesting and timely.

This group of individuals is badly in need of further study in order that constructive plans can be made. In some institutions considerable work has been done with the electroencephalogram, and it has been found that normal waves have been present in a large percentage of these individuals.

Dr. Wilson has done considerable work along this line at the University of Virginia Hospital. I wish he would tell us something about his results at this time, if possible.

DR. ARNOLD, closing the discussion: I am not going to try to answer these questions; most of them I couldn't.

In regard to Dr. Tucker's statement, what he said about these patients is true. They do lie, and apparently for no reason at all. They lie merely to entertain you, and without any regard to fact. You will call them on one lie and they will start right off on another.

Dr. Hamlin asks about the responsibility of the court. My experience with the courts in this state is that they do hold them responsible.

SWALLOWED AIR.*

STAIGE D. BLACKFORD, B.S., M.D.,

From the Department of Internal Medicine, University of Virginia Hospital,
Charlottesville, Virginia.

The investigations of Wangensteen on the origin of intestinal gas in intestinal obstruction may necessitate a revision of the previous concepts of the origin of gas elsewhere in the alimentary tract. Wangensteen has shown experimentally that even in intestinal obstruction a relatively small proportion of the gaseous distention is due to gas of digestive or fermentative origin. According to his estimates, in intestinal obstruction, approximately seventy per cent of the gas present is from swallowed air, about twenty per cent from diffusion of gases from the blood stream into the intestine, and only about ten per cent

from digestive or fermentative processes. He has further demonstrated that if air-swallowing is prevented by esophagostomy and closure of the distal esophagus, no appreciable distention occurs in ileal obstruction of dogs, and that the animals die of starvation rather than obstruction.

These observations indicate a new importance for air-swallowing not only in intestinal but also perhaps in gastric gaseous accumulations. Gas in the stomach may arise from several sources. First, it may theoretically occur from gaseous diffusion into the stomach from the blood stream but seems unlikely that this mechanism accounts for any appreciable amount of gas in the stomach. Secondly, it is a common belief

*Read before the Stuart Circle Hospital Clinical Club, Richmond, Va., February 12, 1941.

that gas in the stomach is formed from fermentative or digestive processes. There seems to be little to substantiate such a belief because if hydrochloric acid is present, it inhibits such processes, and if it is absent, the normal emptying time of the stomach is usually so short that there is insufficient time for gas to be formed. However, fermentation may conceivably be an important source of gas formation in achlorhydria with obstruction. It is obvious that chemical reactions between alkalis and hydrochloric acid produce gas in the stomach but in this event, the origin of the gas formation is usually obvious. Thirdly, it appears that swallowed air must account for the major portion of gas accumulated in the stomach, as it apparently does in the intestines. It is possible that there might be a regurgitation of gas into the stomach through the pylorus but there is little to indicate such a possibility. Finally, it seems that most of the gas in the alimentary canal is derived from swallowed air.

If the swallowing of air is such a major factor in alimentary gas, the question arises how does air-swallowing come about. It is well known that a small quantity of air enters the stomach with swallowing under normal circumstances. An air bubble above the level of the barium meal is to be expected in fluoroscopic study of the gastro-intestinal tract with the barium meal. There is probably always a little air in the mouth which is swallowed along with food, liquids or saliva. Furthermore, certain foods are frothy with air put into them to make them lighter and carbonated drinks contain compressed gas which is liberated in the stomach. But in addition to these, an excessive amount of air may be swallowed through faulty muscular coordination. To swallow properly, one should close the lips, suck in the cheeks, press the tongue firmly against the hard palate before the process of deglutition begins. By this method, excessive air in the mouth is expelled through the nasopharynx. Failure to coordinate in this sequence leads to the abnormal swallowing of air.

In normal individuals, proper deglutition occurs automatically and the small quantities of air ingested produce no discomfort. Loss of the knack to swallow properly may result from faulty habits such as eating too rapidly but it seems particularly prone to occur in nervous individuals. Such nervous individuals may be nervous only from some unusual nervous tension, as from illness. Many of them are confirmed psychoneurotics.

About two years ago, I examined an elderly lady who had no complaints of significance. In the routine history, it was revealed that she belched more than average but the symptom hardly required treatment. Six months ago, elsewhere she developed ascites and became excessively uncomfortable from the combination of ascites plus an inordinate amount of gas. A film of the abdomen showed the stomach distended to unbelievable proportions with gas, but two days later, when a barium meal was given, the stomach was of normal size. She then came under my care again and was proven at operation to have a papillary adeno-carcinoma of the right ovary with metastatic peritoneal implants. After following the anti-aerophagia regime, to be discussed later, she was infinitely more comfortable although the ascites continued unabated post-operatively. Apparently this patient would not have developed aerophagia of clinical importance had it not been for the superimposed strain of her organic illness.

As the result of improper swallowing an unusual amount of gas may be ingested into the stomach. This produces a sensation, often postprandially, of a slight epigastric discomfort and the subject feels that if he could just belch successfully, it would afford relief. In these circumstances, many people try to force a belch spontaneously. In order to accomplish this, usually subconsciously they suck in a little air and swallow it. If a belch ensues, the sensation may be so satisfying that the swallow-belch cycle is continued in an orgy of gaseous eructations. If, on the other hand, no eructation is produced, the intragastric tension is increased and hence the discomfort intensified. Most of the air in the stomach which is not belched up is passed on into the intestines where it contributes to intestinal flatulence as already outlined.

Some years ago, a woman in her thirties was referred because of violent generalized abdominal pain at night for the preceding six weeks. About a year previously, she had had a radical breast amputation for malignancy and had constantly feared a recurrence or a metastasis. After the abdominal pain began, she and her physician were both convinced, in spite of a negative gastro-intestinal roentgen study, that the pains were due to metastasis. In the office she was observed to swallow air copiously and was then asked if the nocturnal pains were associated with distention or relieved by the rectal expulsion of gas. When she replied affirmatively to both questions, she was placed on an anti-aerophagia regime, with complete, immediate and permanent relief. She has had no further abdominal discomfort and no return of the carcinoma.

The effect of an excessive distention of the stomach by gas leads not only to epigastric discomfort, but may also produce acute pain in the lower back, and the chest either anteriorly or posteriorly. The in-

creased size of the distended stomach may "crowd the heart and lungs," giving rise to palpitation, tachycardia, cardiac irregularities, and dyspnea. The sub-sternal pain may even be confused with true anginal pain. A sensation of oppression in the head, dizziness, tinnitus and nervousness often seem to accompany the epigastric distention although the exact explanation for these sensations is not clear.

A few months ago, a young white mill worker was seen in the Out-Patient Clinic because of pain in the stomach of two and a half years' duration. The pains were usually dull but had been sharp at times with radiation to the lumbar region. The pain was accompanied by dizziness, "oppression in the head", nervousness and palpitation on exertion. On direct questioning, it was ascertained that belching usually relieved the symptoms and that the patient often belched for hours. Shortly after onset of the symptoms, the patient had been admitted to his local hospital where he remained for eight days without relief. Subsequently, he had had an appendectomy, tonsillectomy and hemorrhoidectomy without relief. He had been incapacitated for work by his illness and had lost twenty pounds in weight. After two weeks on an anti-aerophagia regime, he reported that he was practically well and had returned to work.

The epigastric discomfort may be extremely severe, even to the point of simulating gall bladder colic. On the other hand, it is not clear why a diseased gall bladder should be said to be a cause of flatulence, unless patients with gall bladder disease are more likely to swallow air.

Although only three articles in English have been published on aerophagia in the past ten years, and medical textbooks almost ignore the condition, it is the writer's opinion that aerophagia is the most frequently occurring and the least frequently recognized cause of digestive symptoms.

There is no condition that can be more easily recognized from the history than aerophagia, provided one remembers to ask, "Do you have an excessive amount of belching." Anyone who belches more than four or five times is presumptively an aerophagi- ac. Physical examination is helpful only if, as is often the case, the patient puts on an exhibition of air swallowing while in the office. Excessive distention in the epigastrium or over the whole abdomen may be suggestive but it is not conclusive. The diagnosis may be clinched by seeing air pass with the barium into the stomach during roentgenologic study.

The great pitfall in the diagnosis of aerophagia is that this symptom may obscure more serious organic

disease, which must be excluded by thorough diagnostic studies in many instances, especially in older subjects. Nearly all aerophagi-acs are psychoneurotics and it is often necessary to obtain a complete situational analysis in order to do the patient full justice. The importance of the psyche in this condition cannot be overemphasized.

Once the diagnosis of simple aerophagia is made, the condition can usually be most satisfactorily treated. The most difficult part of the problem often is to convince the patient of the fact that they are swallowing air and that the gas belched is not due to fermentation or their "food turning to gas." If one encounters a patient in an exhibition of the swallow-belch cycle, this can almost invariably be dramatically terminated by separating the lips so that unconscious air-swallowing is discontinued. As soon as the air already ingested has been expelled, the belching ceases and it can be explained to the patient that the "cure" was simply the result of stopping the air-swallowing.

Many years ago, I was called to the country one cold winter night because a fair, fat fortyish female was "having another gall bladder attack". This patient had been advised by doctors whom she had told about her attacks that a cholecystectomy was necessary. No doctor had previously seen her in an acute attack. On arrival, the patient was sitting bolt upright in bed, expelling such large amounts of air that she could have inflated a dirigible. Propping her lips apart with a cork relieved her pain a few minutes but this treatment was so undignified that I have not been called again. However, I happen to know that she still possesses her gall bladder.

At times, this procedure will convince the sufferer of the true cause of the discomfort and they will become cooperative to the extent of overcoming the "bad habit". Otherwise, it may be a laborious task to obtain the patient's confidence and cooperation. However, in most instances a time-consuming explanation of the mechanism of air-swallowing will convince a reasonable patient.

Recently a tuberculous young white woman was sent to the Medical Clinic for an opinion on the advisability of a thoracoplasty operation because she had lost twenty pounds in weight while a partial pneumothorax was continued. Excessive belching was observed and on questioning she volunteered that "she couldn't eat because all her food turned to gas". She had complained of the gas while at the sanatorium and had been told that she was "just nervous". No instructions had been given her about how to stop the gaseous eructations. In the clinic, we spent much time in giving her anti-aerophagia instructions and asked her to report her progress by mail.

A week later she wrote that she had gained five pounds and was symptom-free. The thoracoplasty has been deferred.

Patients must be impressed with the fact that they have unconsciously acquired a "bad habit," comparable perhaps to "thumb-sucking," which they—and they alone—can conquer. The responsibility for victory must be placed upon the sufferer but the physician must assume the position that it is a habit that can be cured by the patient, provided he will devote a sufficient time to overcome the difficulty.

The next most important point in treatment is to tell the patient how to swallow properly. One must close the lips, suck in the cheeks, press the tongue against the roof of the mouth before swallowing whether they are taking food, liquids or are merely swallowing saliva. The physician should then demonstrate the process and insist that the patient repeat it after him. When the patient's technique is satisfactory, it must be insisted that they concentrate on the process of deglutition every time they swallow, even saliva, for a few days until they have re-educated themselves in the proper way to swallow. This is all important but it is not as simple as it sounds.

Taking air into the mouth over liquids while drinking is not uncommon but can be easily obviated by insisting that the patient always make a "water-seal" with his upper lip on the liquid which prevents the intake of air above the fluid.

A wealthy patient was seen recently complaining of indigestion, which on further questioning meant epigastric distress relieved by belching. He had been examined by several well-known physicians in New York and had spent a week in diagnostic studies at the best known middle western clinic, but his symptoms had continued.

It was obvious even without the comprehensive diagnostic studies which were repeated that this patient suffered primarily from air-swallowing but in spite of all efforts on our part, his belching continued. On the day before he was to leave the hospital, he was observed drinking a glass of water. His difficulty was then apparent. He was taking in more air above the liquid than he was taking liquid. When shown how to make a "water-seal" on the glass with his upper lip, his belching ceased.

Patients must be told that they should try *not* to belch spontaneously because by so doing they subconsciously begin swallowing air in order to produce the belch. This is difficult for some people to understand but it is a point which must be emphasized. If belching is absolutely imperative, it is preferable to use soda, a carbonated drink or a carminative.

Finally, since nearly all of these sufferers are nervous, it seems worthwhile to routinely administer a sedative. A drachm of elixir of phenobarbital before meals is generally satisfactory. The medication often receives the credit from the patient in successfully treated cases, but the remainder of the regime is probably of greater importance.

An out-patient case, who had been incapacitated for two years by aerophagia, was recently seen. He had been to numerous physicians and tried numerous medicines. The diagnosis was obvious and routine instructions were given. Two weeks later, he wrote back saying that he was entirely symptom-free but that he wanted some more of that "marvellous red medicine that had cured him".

In summary, swallowed air is the most important factor in belching and probably also in intestinal flatulence. It produces a variety of symptoms and is often overlooked as a cause of indigestion. It can be easily recognized and usually successfully treated by simple measures.

PELVIMETRY AND ITS EVALUATION.*

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Pelvimetry, as its name implies, means the measurement of the diameters of the pelvis. At the outset, it may be stated that the female pelvis is of tremendous importance to the obstetric specialist and to any practitioner who assumes the responsibility of giving obstetric care to his patients. The course of every labor is influenced by the relationship between

the shape of the maternal pelvis and the size of the fetal head (passage and passenger). Since anomalies of the fetal head are rare as compared with abnormalities in the size and shape of maternal pelvis, and the fetal head possesses a degree of moldability which the maternal pelvis does not, the importance of careful study of the pelvis of every patient presenting herself for obstetric care becomes apparent.

*Read by invitation before the Grace Hospital Staff Meeting, January 8, 1941.

It may not be amiss, at this point, to briefly outline an historical sketch and a general survey of this subject to bring about comparative studies between former years and modern day practice.

The bony pelvis, and more particularly the deformed pelvis, received scant medical consideration to the time of Van Deventer at the turn of the eighteenth century. Vesalius, in the sixteenth century, was the first to give an accurate description of the normal pelvis. Van Deventer made no measurements of the pelvis but he recognized the variations in normal and deformed pelvises. Of greater clinical significance was the work of Jean Louis Baudelocque (1789) who developed the technic of accurately measuring the normal and distorted pelvis in the living woman by means of a pair of calipers or compasses, and described the external conjugate diameter which now bears his name. Then came the pelvimeter, an invention of G. W. Stern, which placed in the hands of the obstetrician an accurate means of determining the various diameters of the pelvis. The way was now open for the exhaustive researches, both anatomical and clinical, which form the basis for our modern conception of the contracted pelvis and its relationship to childbirth. Thus, in 1851, Gustav Michaelis, professor in Kiel, and his successor, Karl Lutzman, each carefully measured the pelvises of one thousand German women.

It was formerly thought that by measuring the distance between the spinous processes of the sacrum and the symphysis pubis and subtracting from it what it is judged to be the thickness of the bones and soft parts, one might arrive at an approximate estimate of the measurement of the conjugate diameter of the pelvic brim. It is now admitted that this method can never be depended on, and that, taken by itself, it is practically useless. A change in the relative length of other external measurements of the pelvis is, however, often of great value in showing the existence of deformity internally, although not in judging of its amount.

It is essential that the physician be able to diagnose the existence and extent of a pelvic contraction before the onset of labor, in order that he may, as far as possible, decide in advance upon the proper course of treatment to be carried out in each case. With this in view, accurate pelvic mensuration should constitute a regular part of the routine examination of the pregnant woman and, in keeping with our present-day knowledge, the physician who prac-

tices obstetrics should utilize pelvimetry on the same principle as the internist who treats diseases of the heart and lungs with the aid of auscultation and percussion.

At the preliminary examination, which should be made early, either on the first or second visit, the physician should neglect no points in obtaining all possible data bearing on the case. Generally speaking, large, well-built women are likely to have normal, and undersized women contracted pelvises; but this rule is by no means constant and it is not unusual to disclose some abnormality in the former and perfectly normal pelvises in the latter.

Several years ago the *San Francisco Examiner* stated, in large type across the page, "San Francisco Women's Hips Largest". So much the better for San Francisco and its future generation. Under this caption the famous columnist, Arthur Brisbane, said, "A woman built like a wooden lath is all right for Ziegfeld's Follies, well-built to crawl through a picket fence. The mothers of great men, from Charlemagne to Lincoln, from Alexander's mother, Olympias, who danced with snakes wrapped around her, with no other clothing, to the mother of Renan with good peasant blood, you will find real hips, something substantial, not an osteological anatomical specimen of pelvic depression".

The gait of the patient should be carefully observed since the existence of a limp or some peculiar way in which the feet are placed upon the floor may serve to direct attention to the possibility of a pelvic deformity; marked abnormalities of the spinal column—kyphosis or lordosis—are also suggestive, and even slight degrees of spinal curvature should not be overlooked as they are frequently of rachitic origin. The more usual signs of rachitis—deformities of the extremities, the characteristically shaped head and the rachitic rosary—should always be looked for. Inquiry should be made as to the age at which the patient first learned to walk and if she is found to have been backward in this respect the possibility of a rachitic pelvis should be borne in mind even though the usual external evidences of the disease may be lacking.

If the patient is a multipara she should be questioned as to the course of previous labors and the history of any serious difficulty should always suggest the possibility of an abnormal pelvis. On the other hand, a negative history is by no means valuable, as it is a well-known fact that in moderate

degrees of pelvic contraction the first labor may be relatively easy, while each successive one becomes more difficult.

In primiparous women a markedly pendulous abdomen or the absence of engagement of the head in the last month of pregnancy should always be regarded as evidence of the existence of a marked disproportion between the child's head and the pelvis, until careful examination proves that such is not the case. This leads up to the question of pelvimetry.

While the above-mentioned conditions are of value in suggesting the possibility of pelvic deformity, accurate information as to its existence and extent can be obtained only by measuring the pelvis. For this purpose external and internal pelvimetry are employed, i. e., measurements are taken from the surface of the body and through the vagina. This includes external measurements, internal measurements and measurements of pelvic outlet.

External Measurements: Inter-spinous, intercrests, bitrochanteric, right oblique, left oblique, external conjugate (Baudelocque), and circumference of pelvis.

Internal Measurements: Conjugate diagonalis and conjugate vera.

Measurement of Pelvic Outlet: Tuber ischii, anterior sagittal, posterior sagittal, antero-posterior, depth of symphysis and estimation of pubic arch.

The Value of External Pelvimetry: In the description of the external conjugate, Baudelocque stated that by deducting three inches from it the length of the true conjugate could be accurately estimated. Later experience, however, has shown that these conclusions were incorrect and that the length of the external conjugate does not give a very clear-cut idea of that of the conjugate vera, since several other factors may exist. Thus, the amount to be deducted varies with the thickness of the sacrum and the symphysis pubis, and also depends, to a great degree, upon the elevation of the promontory of the sacrum and the length of the spinous process of the last lumbar vertebra. As a rule, when the external conjugate measures between 20 to 21 cm., the conjugate vera will rarely be found to be shortened; when, however, it measures between 18 and 19 cm., the conjugate vera is shortened in about one-half of the cases; and when it is below 17 cm. pelvic contraction is almost always present.

The external measurements are of considerable value in that they serve to indicate with a fair degree

of certainty the variety of pelvis with which one has to deal. For example, the distance between the spines is 2.5 to 3 cm. less than that between the crests; but in the rachitic pelvis, owing to the flaring of the iliac spines, this proportion becomes altered, and the two measurements approximate one another in length, the former being equal to, and sometimes exceeding the latter. If both measurements are much below normal, and at the same time the external conjugate is proportionately shortened, one might conclude that the entire pelvis measures below normal in all its diameters and that a pelvic contraction exists.

These external measurements must be corroborated by internal measurements chiefly of the antero-posterior diameter, by which alone we can estimate the amount of the deformity. When the diagonal conjugate is obtained, a deduction of 1.5 to 2 cm. is made and this will give the true conjugate.

The Value of Internal Pelvimetry not only serves as a means of finding out the true status in the pelvic cavity (basin) but also as a basis for the morphologic classification of pelves. In addition, certain other informative factors can be revealed, such as palpation of the sacrum, coccyx, promontory and ischial spines. The presence of a pseudo-promontory, exostoses, and osteologic pelvic tumors may be noted.

During the process of measuring the diagonal conjugate, the anterior surface of the sacrum should be palpated from below upward and its vertical and lateral curvature noted. At the same time the mobility of the coccyx should be tested by seizing it between the fingers in the vagina and the thumb externally. In normal pelves only the last three sacral vertebrae can be felt without pushing up the perineum, whereas in markedly contracted varieties the entire anterior surface of the sacrum can be readily palpated.

The Value of Measurements of the Pelvic Outlet furnishes information as to whether this portion of the pelvis is normal or if there exists an outlet contraction. In about 5 per cent of all women there exists an outlet contraction, and probably represents the most usual type of abnormality encountered in the white women of this country, especially those in the upper classes; and, as they may give rise to serious dystocia, should receive full consideration and constitute an integral part of the routine examination of the pelvis. By palpating the pubic

arch, observations may be made whether the arch is wide (normal), narrow or angulated. When the latter occurs it approaches the male type. In the women with a normal or gynecoid pelvis, the rami of the pubis are short and the subpubic arch is wide; this makes the pelvis shallow and gives the baby a shorter trip from the superior strait to the inferior strait. The wide arch at the symphysis allows the baby in being born to hug the symphysis more closely; hence, the perineum is not so frequently stretched or torn. Said Dr. Oliver Wendell Holmes, displaying the pubic arch of a female pelvis to his medical students, "Gentlemen, this is the triumphal arch through which every candidate for immortality must pass."

SUMMARY

Pelvimetry of itself may be regarded as playing an important role in the general examination of the obstetric patient, analogous to a complete blood count or some other laboratory procedure in any given case, and serves as an aid in outlining the pelvic archi-

tecture, thus enabling one to draw certain important conclusions. As an auxiliary agent, it may be mentioned that, when disproportion is suspected in these cases, a radiographic examination may ascertain the *fetal head-pelvic diameter ratio* with a fairly high degree of accuracy.

A serious attitude toward the fundamental obstetric principle of obtaining previous knowledge of the relationship between the fetal head and the maternal pelvis (before labor actually sets in) will prevent many accidents which occur needlessly during labor, and reduce infant and maternal mortality.

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Professional Building.

THE PHYSIO-PATHOLOGY OF UNCONTROLLED DIABETES MELLITUS.

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Introduction: After scrutiny of the literature we find that there has been no paper written on this topic as such. The numerous articles referred to were all published with the intention of establishing some other point. We have attempted to drain from them vital physiologic, pathologic and clinical facts and to reconstruct them into a form which would stress the significance of the issue raised in this paper.

The Issue: Stated concisely, our issue is this. A patient has diabetes mellitus. It is satisfactorily controlled for a period of months or years. Suddenly this patient's clinical pathology runs amuck. The blood or urine shows increase or decrease of sugar—perhaps ketone bodies appear—perhaps the patient becomes ill with symptoms of hypoglycemia. The question is: what factors must be considered in determining the cause of this departure from a previously controlled state, and how may they be explained?

We do not intend to offer differential diagnoses of the various conditions nor to suggest the indicated chances in treatment—but purely to point out the factors which an alert physician must consider under such circumstances, and to substantiate our views by experimental evidence and plausible discussion of the mechanisms involved.

FACTORS UNDER PATIENT'S CONTROL: *Diet irregularities* are at once the most frequent and most obvious of all; and yet they are too often forgotten. Improper preparation of the diet prescribed, as when a new cook with different ideas of household measures comes on the scene, will cause a change in the regulation. Failure to eat a full diet will permit the therapeutic insulin to bring the sugar level below normal. We have seen diabetic children in institutions time after time deliberately upset a dish of food under the table, in the expectation that when they started to go into shock from insulin hypoglycemia they would be given candy. On the other hand, over-

eating leads to trouble more frequently than any other single cause. The patient rationalizes this by believing he is using smaller portions and can, therefore, eat more of them. Since he doesn't feel that he is over-eating, the physician must very carefully analyze every alimentary step the patient takes. Losing part of the diet through vomiting, pyloric obstruction and diarrhea will lower the glycemic level both by lack of intake and by excessive insulin action.

The advent of prescribing *exercise* for a diabetic patient in the hopes of oxidizing more sugar and requiring less insulin will affect the degree of control of the diabetes.² Individual ideas as to different degrees of exercise certainly vary. A patient told to do a particular amount of exercise may do much more than that. When the physician notices that the patient's blood sugar runs lower than it should with that amount of insulin, and questions the latter concerning his exercise, the patient may in good faith reply that he is doing just what he was told. Actually, unless the physician investigates this thoroughly, the patient may have to go into shock before the cause of the faulty control is detected.

Mechanical factors may turn out to be the cause; e.g., errors in filling the insulin syringe, or using wrong concentrations of insulin per cc. in the bottle as compared with the scale on the insulin syringe, will lead to gross irregularities in control. Further, using the same site of injection repeatedly delays or prevents absorption of insulin. This necessitates increasing doses, which, when injected into a new site, produces a hypoglycemia.²

FACTORS NOT UNDER PATIENT'S CONTROL: Another group of transient factors is the *accidental*. Fractures may go undetected and be the cause of internal hemorrhage. This leads to progressive loss of blood with resulting concentration of its chemical substances. Trauma to the skull may injure the floor of the fourth ventricle of the brain and result in glycosuria.³ The fact that these conditions are transient does not make them any less important. Nothing is so confounding as obscurity.

We come now to a group of important and prolonged causes of failure to control the diabetic state—namely, the *endocrine disorders*. Much new light has been thrown on these variations by Anselmino and Hoffmann's observations that alkaline extracts of the pituitary cause acetoneuria, and those of Houssay and Long that hypophysectomy and adrenalectomy diminish or eliminate ketosis.

Pituitary: Varied pituitary activity will effect changes in the glycemic level.⁴ The eosinophilic cells of the anterior lobe elaborate a diabetogenic (or glycolytic) hormone. This renders liver glycogen less stable, so that any depression of blood sugar is rapidly countered by an outpouring of glucose from the liver, not only returning the blood sugar to normal but often carrying it to abnormal heights. It is believed that this glycolytic factor antagonizes the action of insulin in the peripheral tissues.⁵ Hence, eosinophilic hyperplasia with acromegaly, or a slow-growing neoplasm, will lead to endless difficulty in regulating diabetic metabolism.

Thyroid: In regard to the thyroid, it may be said that myxedema decreases the blood sugar. Fitz and Allen believe that this is due to a depression of general metabolism rather than to reduced activity of the thyroid gland *per se*.⁶ Hyperthyroidism, on the other hand, which is frequently associated with diabetes,⁷ certainly must be considered as being a factor behind an increased sugar in blood or urine. Since over-function of the thyroid gland predisposes to diabetes mellitus,⁷ surely a variance in the hyperthyroid state will produce a change in the course of the carbohydrate metabolism—and subsequently fat combustion. This gains importance when we appreciate that many cases of mild thyroid disease go undetected. The most prevalent belief today is that the thyroid factor acts by way of the liver, inducing glycolysis.

Adrenal Cortex Disturbance is a third endocrine factor defying control of the diabetic state. Although the mechanism is not completely understood, it is believed that the cortical hormone is concerned specifically with carbohydrate metabolism, since depletion of liver glycogen and hypoglycemia occur in cortical insufficiency (Addison's disease) and are prevented by cortical extracts. Silvette and Britton⁸ have reported that liver glycogen and blood sugar are raised above normal values by injection of the extract.

Menstruation: Physicians who had been treating diabetic children observed that there came a time when the usual regime did not suffice. This was particularly true in growing girls who, for a period of a year or so, seemed to require increased amounts of insulin. Further studies revealed the relationship of increased blood sugar to the onset of menstruation.² In all probability this is caused by the increased amounts of diabetogenic hormone produced

by the anterior pituitary which at this period of life is more active. The excess insulin required can usually be decreased somewhat a year or two after the establishment of regular menstruation.

Pregnancy: The relationship between diabetes and pregnancy has for a long time been known to be important. From our point of view, it is particularly significant early in pregnancy, when the condition is not suspected, and yet severe metabolic shock is imposed on the diabetic state. The physician may fail to become aware of this complication either because he does not suspect it and it is not offered voluntarily by the patient, or because the patient, if asked, may for reasons of her own deny it, or, as is frequently the case, the patient herself is really unaware. Wilder⁹ and others claim that pregnancy may aggravate an existing diabetes due to the ingestion of large amounts of food. On the other hand, the work of Stander and Peckham would indicate that that tendency to hyperglycemia may decrease or disappear in pregnancy. They imply that this may be due to a pancreatic hormone coming from the fetus, or perhaps a greater demand by the fetus for maternal carbohydrates. Their conclusions are based on careful studies of urine and blood sugar, ketone bodies and ketogenic-antiketogenic ratios.¹⁰ These two antagonistic views serve to emphasize the importance of the problem. No matter what the cause, and no matter what the effect, pregnancy distinctly alters the otherwise uneventful control of the diabetic patient. To generalize, it may be said that the first semester of pregnancy tends to aggravate the diabetes as evidenced by increasing hyperglycemia and glycosuria, while the latter half of gestation lowers the blood and urinary sugar. In either case, however, the problem of control is made more difficult. With methods for earlier diagnosis of pregnancy, the alert diabetes clinician will detect the gravid state in time to calculate for the factors in variance and reestablish control.

Acute Disease: Along the line of acute disease, suffice to say that fever is accompanied by acidosis. All infectious phenomena obscured by *insidious onset* must be looked for. *Carbuncles*, though upsetting the diabetic equilibrium severely, are externally manifest and should offer no difficulty in being detected as the cause of a rising blood sugar and the presence of ketone bodies in blood and urine.

Trichomonads: Routine observations on the quantity of sugar in the urine of a diabetic who also har-

bored *Trichomonas hominis* in his intestine, led to the impression that glycosuria and the number of Trichomonads in the stool tended to increase and diminish at the same time.¹¹ This is explained by the novel concept that the intestine, as well as the kidney, may act as an avenue for release of sugar in hyperglycemic states. If this were true, the amount of carbohydrate in the intestinal contents would increase as it does within the urine. This is borne out by the fact that the metabolic and reproductive activities of other parasitic forms (*Entameba histolytica*, *Balantidium coli*, *Trichomonas fetus*, *et al*) are stimulated by the presence of carbohydrates. Further, *Trichomonas hominis* itself is known to increase in greater numbers *in vitro* in the presence of added carbohydrate.¹² When this is the case, gastrointestinal disturbances may occur, with diarrhea, vomiting, hemorrhage, anorexia, etc., all of which obviously lead to difficulties in controlling the diabetic state.

Chronic Disease: In the presence of chronic infection, ability to utilize carbohydrate is impaired. One should, therefore, thoroughly search for chronic sinus or middle ear infection, alveolar abscesses, chronic pulmonary conditions, chronic infection of the gall-bladder, appendix, Fallopian tubes and prostate gland.

Pulmonary Tuberculosis requires special comment because it is now known that it occurs more frequently among diabetics than non-diabetics.¹³ The problem arose from the fact that while treating the diabetes the patient became sicker and sicker from the tuberculosis, since his resistance was not allowed a chance to improve. Treating one, meant decreasing the diet; treating the other, meant increasing it. This has been overcome by the advent of insulin; yet, since it is not uncommon for diabetic patients with tuberculosis to develop ketosis,¹⁴ one should suspect the presence of tuberculosis in that circumstance.

Syphilis bears relation to diabetes by way of producing a specific lesion in the brain.¹⁵ Syphilitic arterial disease with secondary nervous lesions in the region of the fourth ventricle, or gumma in this part, will produce hyperglycemia and glycosuria. Again, this might be due to syphilitic disease of the blood vessels of the pancreas and secondary disease of pancreatic gland tissue. Rosenbloom's review of the literature on this relationship fully corroborates this view.¹⁵ This does not mean that lues causes diabetes, but does imply that certain cases of syphilitic

pancreatitis may be severe enough or peculiar enough to produce the blood, urinary and metabolic findings characteristic of the diabetic state. Since syphilis often goes unadmitted or undetected until tertiary signs are manifested, it is essential to keep this possibility in mind where difficulties arise in maintaining the desired glycemic level in the patient.

Liver: The role of liver pathology in uncontrolled diabetes has become increasingly important. A diabetic state *per se* has never been known to cause cirrhosis. It does, however, lower the metabolic integrity of the liver,¹⁶ and among other things brings down the glycogen content to a subnormal quantity. This, together with a chronic alcoholism and an added irritant toxic factor, will produce a cirrhosis;¹⁷ and thus, with less glycogen storage, a hyperglycemia results. The sequence of events appears to be fatty infiltration, hyaline degeneration, atrophy of the cells at the periphery of the lobules, and fibroblastic proliferation, ending in the typical fibrotic structure of cirrhosis. This has been shown to occur in depancreatized dogs maintained with insulin.^{18, 19} The significance of this lies in the fact that liver changes make control of diabetes difficult by virtue of aiding in the maintenance of a more or less chronic acidosis. More insulin will be required for these patients. The relationship alluded to is borne out by the observations of Hart and Lisa¹⁷ that cirrhotic ascites in a diabetic disappeared when insulin dosage was increased.

Leukemia: There is an interesting series of five cases reported wherein diabetes was treated successfully until a certain date, when everything went wrong. It was not controlled again until the diagnosis of leukemia was established, and radiation therapy instituted to control the leukemia. Post-mortem examination was performed in only one of these cases and leukemic infiltration was detected in the pancreas. Had the other cases been autopsied, they might have substantiated this view of the effect of leukemia on the control of the diabetic state. Four of these five cases were the myeloid type.²⁰ This relationship has come to be of rather frequent occurrence.

Psychic, Nervous and Emotional Factors have gained importance since Le Winn reported a hyperinsulinism improved during pregnancy by psychic trauma.²¹ Severe nervous shocks such as may result from injuries, exposures, anxieties, fears, unhappiness from domestic infelicities and financial losses,

are notorious factors in maintaining glycosuria. Various injuries and diseases of the central nervous system, such as concussions, skull fractures, apoplexies, brain tumors, etc., act in the same way. It is true that such glycosuria is often transient rather than diabetic; but if, as Woodyatt²² claims, such factors can actually provoke the onset of a true diabetes previously non-existent, certainly they can prove very troublesome in the course of existing diabetic states.

Insulin Resistance and Sensitivity: Insulin resistance may be defined as the requisition by a patient of more than 100 units per day. The importance of this factor in uncontrolled diabetes is seen as soon as it is appreciated that extreme cases of ketosis may require more than 3,000 units in twenty-four hours to be effective.²³ Somogyi²⁴ has postulated that the explanation of insulin resistance lies in the following: large doses of insulin reduce the blood sugar; this low glycemic level stimulates the suprarenal glands to produce an excess of epinephrine; this raises the blood sugar, and constantly counteracts the action of insulin.

Himsworth²⁵ and Nadler²⁶ independently have shown that insulin sensitivity is due to lack of insulin, and that carbohydrate increases sensitivity. They believe that the effects of insulin are governed by an unknown factor or condition, a deficiency of which results in impaired peripheral action and is responsible for insensitiveness or resistance to insulin. That the liver cannot be solely responsible is indicated by the repeated finding that sensitiveness to insulin induced in the normal dog is not abolished by hepatectomy.

Since a patient on a high carbohydrate diet is likely to become relatively insulin resistant, and a patient on a low carbohydrate diet is likely to become insulin sensitive, this factor should be appreciated when changes in blood and urinary sugar and sugar tolerance curves turn up in a previously regulated individual. The development of high carbohydrate tolerance and insulin resistance appear to have been aided by the use of protamine zinc insulin.

It should be added that allergic reactions, Trichomonad infestation and tuberculosis have been reported as factors associated with insulin resistance.²⁶

Miscellaneous Factors: Finally, such miscellaneous factors as prolonged exposure to sunlight, high altitudes, low fluid intake and dehydration from other causes, and acid-ash diets must be considered.

These render less insulin necessary and hence favor hypoglycemic reaction if the usual dosage is maintained.

SUMMARY

We have stated that many cases of regulated diabetes become transiently or permanently uncontrolled. No inclusive paper on the varied causes of this phenomenon has been discovered. We have attempted to gather these causes together and, where possible, to explain the physio-pathology involved. The related conditions may be classified as follows:

A. Factors under Patient's Control—

1. Diet Irregularities
2. Variance of Exercise
3. Mechanical Factors.

B. Factors not under Patient's Control—

1. Accidental—trauma, hemorrhage, pique
2. Endocrine Disturbances
 - a—Pituitary
 - b—Thyroid
 - c—Adrenal Cortex
 - d—Menstruation
 - e—Pregnancy
3. Acute Disease
 - a—Insidious Onset
 - b—Carbuncle
 - c—Trichomonad Infestation.
4. Chronic Disease
 - a—Visceral Infection
 - b—Tuberculosis
 - c—Syphilis
 - d—Liver Disease
 - e—Leukemia.
5. Psychic, Nervous and Emotional Factors
6. Insulin Resistance and Sensitivity
7. Miscellaneous Factors.

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LEUKOPENIA—IMPRESSIONS AND REVIEW OF CASE REPORTS.*

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In most textbooks of medicine it is stated that individuals in whose blood there are found 5,000 leucocytes or less per cubic millimeter show a

state of leukopenia. There are few data available concerned directly with the study of leukopenia. Nevertheless, Roberts and Kracke, in a statistical study of 8,000 records of patients seen in private practice for the ten year period be-

*Read before the Clinical Club of Stuart Circle Hospital, Richmond, Va., March 12, 1941.

tween 1920 and 1930, recorded that leukopenia occurred in 23 per cent of their patients. Such a percentage is impressive enough to indicate that the paucity of material on this subject must be due to frequent failure of the physician to perceive the condition rather than to the infrequency of its occurrence.

During the past few years I have encountered a number of cases of mild leukopenia with vague symptoms of chronic fatigue, lassitude, lack of appetite, lack of endurance, and often nervousness, which symptoms could not be based upon any physical findings, dietary deficiency or lack of proper living habits on the part of the patient. So much has recently been written regarding agranulocytosis following toxicity from drugs, especially the benzene group, which causes an aplasia of the bone marrow and lack of maturation of the white cells, that I will not mention further this type of leukopenia. However, only since 1922, when agranulocytosis was first reported by Schultz, has a true significance of the leukopenic state been fully appreciated. Before that time white blood cell decrease was sometimes regarded as a valuable diagnostic sign, but it was not recognized that wholesale bacterial invasion might soon follow this decrease in the number of protecting leucocytes.¹

It must be borne in mind that each granulocyte lives only a short time, probably not over 4 days, so that many cells have to be released from the bone marrow every day to make up for those normally destroyed. Apparently the granulocytes have little function while in circulation.

The factors involving leukopenia are:

1. The activity of the bone marrow—the bone marrow may be aplastic or hyperplastic.
2. Increased elimination of white cells.
3. Increased rate of destruction.
4. Abnormal distribution of white cells.

Among the factors which affect granulopoiesis are: infection; chemicals; radiation; excessive sunlight, which depresses bone marrow to a variable extent in some people; diet; hormones; physiological failure in the aged and often in people who are not aged; aplastic anemia; aleukemic leukemia; pernicious anemia during periods of relapse; Banti's disease, and various infections, particularly the virus

infections, typhoid and malaria and overwhelming infections.²

Also, a severe leukopenia may occur in certain conditions characterized by hemorrhagic tendencies.

The following case is a rather interesting one in that it developed in a patient with acute supra-renal failure:

CASE 1—White woman, aged 40, admitted to Stuart Circle Hospital on March 28, 1937, because of generalized aching. About six months prior to her admission to the hospital, she began to have occasional spells of nausea and vomiting associated with some epigastric discomfort and slight mental depression. Her past history was irrelevant except that she had had a cesarean section twelve years ago.

When admitted to the hospital, her white blood count was 4,900, neutrophils 61 per cent, lymphocytes 38 per cent, endothelial leukocytes 1 per cent. Red blood count 4,500,000. Hemoglobin 90 per cent.

All sorts of examinations were made, including gastro-intestinal X-ray and multiple agglutination tests, but nothing especially significant was found. Her white count dropped at one time to as low as 1,000 plus. During her course in the hospital, she consistently ran a temperature between 98.6 degrees and 101 degrees, with correspondingly increased pulse and respiration. Her blood pressure remained almost constant between systolic 70 and 80, diastolic 50 and 60, with one rise of blood pressure to systolic 140 and diastolic 108. A tentative diagnosis of acute supra-renal failure was made because of the fluctuating low blood pressure.

Her nausea and vomiting continued in spite of dietary restriction, intravenous glucose and transfusions. She was given Pentnucleotide, cortin, eschatin, liver extract, yellow bone marrow and finally X-ray treatment of her long bones, at which time her leucocyte count rose to 13,000 with 85 per cent neutrophils, gradually dropping again to an average of 4,500. She finally became comatose and died.

An autopsy³ was done with the exception that the bone marrow was not examined. Nothing significant was found except the following: The liver

2. Kracke and Garver: *Diseases of the Blood and Atlas of Hematology*, Section III, Chap. XII.

3. Autopsy performed by Dr. Regena Beck at Stuart Circle Hospital.

1. Kracke and Garver: *Diseases of the Blood and Atlas of Hematology*, Section III, Chap. XII, Page 135.

on gross section showed moderate congestion and microscopic study showed moderate parenchymatous degeneration and moderate congestion. The supra-renal glands appeared as shells. The adrenals were found to be quite friable, each being accidentally torn. They were found to be hollow organs, the cavity being lined by a dark brown friable substance which has the appearance grossly of being very old blood. They were 5 cm. in length, 2.5 cm. in width at the widest part. The adrenal substance was 5 mm. thick at its thickest part.

Microscopic study—the cells of the cortex seemed to be normal. The medulla was missing.

It was thought probable that the Leukopenia in this case was due to constitutional inactivity of the bone marrow and also to lack of proper distribution of white cells from the bone marrow because of supra-renal failure.

CASE 2—White woman, aged 33, first came under observation March 17, 1939, complaining of generalized joint pains, insomnia, acute pain and a "bluish" spot in the calf of her right leg. Her general physical examination was essentially normal except that there was tenderness and the appearance of a purpuric area about the size of a dime over a vein in the calf of the right leg. Her white blood count was 2,538, differential neutrophils 51 per cent, lymphocytes 37 per cent, eosinophiles 2 per cent, endothelial leukocytes 10 per cent. Hemoglobin 91 per cent, red blood count normal, and temperature of 102 degrees. She was moderately obese. Her tonsils, appendix and uterus had been removed within recent years.

The leg was splinted, elevated and ice kept applied at intervals to the tender areas and she was given absolute bed rest for a period of three weeks.

Since this acute illness she has had from time to time what was thought to be a migratory phlebitis in the veins of the right arm, left arm, left thigh and right thigh, and during the acute exacerbations her white count always drops below 5,000.

When given liver extract intramuscularly, each time there has been a very definite rise of her white count until at times it has reached 9,100. She has been given liver extract at weekly intervals at her own request because of symptomatic relief. In spite of the fact that her blood cultures have been negative, her sedimentation rate at times has been elevated about twice above normal. Her past history with the exception of surgical procedures was nor-

mal. She has two children living and well—the youngest $4\frac{1}{2}$ years old. She is able to perform her duties as a housewife so long as she takes liver extract.

It is thought that the leukopenia in this case is due to suppression of the bone marrow by an infection, the etiological organism of which has not been determined.

CASE 3—Young girl, aged 11, weight 94 pounds, past history irrelevant except for the usual childhood diseases and tonsillectomy. Hemoglobin 65 per cent, red count 3,000,000, white blood count 2,850, differential; lymphocytes 26 per cent, neutrophils 69 per cent, metamyelocytes 4 per cent, endothelial leukocytes 5 per cent. General physical examination normal except for a pharyngitis. Chief complaint stiffness in neck and pain in shoulders.

She was given daily injections of liver extract until her white count reached 6,700; her temperature was 101 degrees F. She recovered after two weeks rest in bed with a normal white count. In order to keep her white blood count above 5,000, it seemed necessary to continue the liver extract at weekly intervals for a month, since in from five to seven days after each injection her white count would drop below 5,000.

In both cases 2 and 3 it is thought that the low white count was due to some type of infection (which we were not able to determine by blood cultures or multiple agglutination tests), which had a suppressive effect upon the bone marrow.

CASE 4—White woman, aged 60, who had been under observation since May, 1926, at which time it was discovered that she had an acute cholecystitis with cholelithiasis and mild diabetes. She had a cholecystectomy without complications in 1926. In August, 1940, she appeared to have an acute pulmonary edema, from which she recovered after administration of concentrated glucose and adrenalin, but it was found that her hemoglobin was 37 per cent, red count 1,895,000, white count 3,400, and she since has been given many transfusions of citrated blood. Differential, lymphocytes 51 per cent, monocytes 3 per cent, eosinophiles 3 per cent, and basophiles 6 per cent.

So long as her hemoglobin could be kept above 50 per cent, which had to be done by transfusions of blood (since there was no response to liver and iron), she was able to do her usual duties as a housekeeper.

Her blood sugar was able to be controlled with the use of 20 units of insulin per day and moderately restricted carbohydrates. From repeated studies of her blood and a biopsy of the bone marrow, which was obtained by a sternal puncture, it was thought that she had aleukemic leukemia or chronic myelogenous leukemia.

On January 19, 1941, she entered the hospital with hemoglobin of less than 25 per cent, with much pulmonary edema, and was given a transfusion to which she did not respond and died.

The autopsy⁴ showed an apparent aplastic bone marrow with chronic passive congestion of all organs, spleen much enlarged, fluid in the peritoneal cavity, both pleural cavities and much pulmonary edema.

CASE 5—White woman, aged 58, was seen first on March 20, 1935, because of lack of endurance, rather marked dyspnea and diffuse bodily aches. Her general physical examination, including electrocardiographic studies, basal metabolism, gastric analysis, the routine blood chemistries and urinary studies, appeared normal. Her hemoglobin was 93 per cent, red count 4,500,000, white count 3,600, differential, lymphocytes 39 per cent, neutrophils 50 per cent, eosinophils 5 per cent, basophils 1 per cent, and metamyelocytes 5 per cent. Complete allergic tests were made in her case and found to be negative.

She had been given liver extract by mouth and by injection since first seen. Occasionally, however, she will omit the liver extract for a period of time and after a few weeks the symptoms recurrently appear. At the present time she is in excellent health although necessarily convinced that liver extract is essential for the continuation of her good feelings. All medication has been eliminated except liver extract.

This case seems to be one in which the leukopoietic tissues have been inactive but are kept active by liver extract.

CASE 6—White boy, aged 6, admitted to Stuart Circle Hospital on February 9, 1939. The patient had a definite spasm of the muscles of the neck with exaggerated knee jerks, an acute pharyngitis, temperature of 103½ degrees, pulse 130. There was a positive König. His spinal fluid appeared normal and there was no increase in spinal fluid pressure. The white blood count was 12,200, neutrophils 88 per cent, lymphocytes 12 per cent.

He was immediately given sulphanilimide, tablets

2 every four hours. Within 24 hours his white blood count had dropped to 3,275, neutrophils 75 per cent, filamented 44 per cent, nonfilamented 31 per cent; lymphocytes 21 per cent, endothelial leucocytes 3 per cent, unclassified 1 per cent.

Daily blood counts were made for a period of 8 days. The sulphanilimide was discontinued and his blood count returned to normal within 48 hours. The meningismus cleared up within a period of 10 days; also the pharyngitis.

This case was thought to be one of neutropenia due to sulphanilimide sensitivity, although, of course, it is possible that the child had a meningismus secondary to an influenza with neutropenia, which was not affected by sulphanilimide but by the type of infection.

CASE 7—White male, aged 47, first seen May 1, 1938, complaining of faintness when up and around, nervousness and some pain in the precordial region, especially upon exertion.

His routine examinations were normal except that his hemoglobin was 69 per cent, red count 2,300,000, white count 3,600. Color index 1.5, differential; lymphocytes 52 per cent, neutrophils 46 per cent, eosinophils 2 per cent. The gastric analysis has repeatedly shown an achylia.

He has been totally relieved by a high protein diet and his blood counts are now as follows: Hemoglobin 80 per cent, erythrocytes 4,250,000, leucocytes 6,300.

This case seems to have been one of a leukopenia due to pernicious anemia and is easily controlled by liver extract and diet.

These few reports were chosen from a series of cases carefully followed over a period of time because they represent the various types of leukopenia associated with or without a general suppression of the bone marrow as indicated by the frequent normal hemoglobin and red cell counts. Seven cases of leukopenia have been reported, five of which were of obscure origin. While it is hard clinically to divide the idiopathic or obscure leukopenia and the well-defined groups because of the obscurity of the etiological factors concerned, it is to be borne in mind that there are cases of severe leukopenia that exist over a period of months or even years causing disability without fatality.

The condition appears to be an intrinsic abnormality of hematopoiesis. As suggested by Rosenthal, among others, there may be leukopenic predisposi-

4. Autopsy performed by Dr. Regena Beck at Stuart Circle Hospital.

tion or trends in certain individuals. As pointed out by Cabot, Clough, Roberts and Kracke, a diagnosis is often made of neurasthenia, psychosis, hysteria and the various neuroses.

Out of the 10,000 case records studied by Mettier and Olsan of the University of California Medical School, the following table is of interest:

Number of Records Examined	10,000
Number with Leucopenia	1,167
Females with Leucopenia	611—52.4% of cases
Males with Leucopenia	556—47.6% of cases

CONDITION IN WHICH LEUCOPENIA OCCURRED	NUMBER OF CASES WITH LEUCOPENIA	PER CENT INCIDENCE OF LEUCOPENIA IN THE VA- RIOUS CONDITIONS
I		75 to 100% incidence
Influenza	137	100% of cases
Typhoid fever	14	100% " "
Brucelliasis (undulant fever)	7	100% " "
Banti's disease (splenic anemia)	19	100% " "
Aleukemic leukemia	9	100% " "
Aplastic anemia	5	100% " "
"Agranulocytic" angina	2	100% " "
Arsphenamine intoxication	2	100% " "
Pernicious anemia, in relapse	109	97% " "
Malaria	29	82% " "
Myxedema untreated	30	75% " "
II		25 to 75% incidence
Sprue	4	57% of cases
Hodgkin's disease	23	52% " "
Arthritis, acute infectious	6	33% " "
Jaundice, catarrhal	9	31% " "
Cirrhosis of liver	22	26% " "
Endocarditis, subacute bacterial	13	25% " "
Lymphosarcoma	6	25% " "
III		4 to 25% incidence
Septicemia, staphylococcus	2	22% of cases
Hyperplasia of thyroid gland	54	22% " "
Hemolytic jaundice, acquired	3	11% " "
Tuberculosis (all forms)	57	21% " "

Cholecystitis, chronic	60	17% " "
Lead poisoning	3	13% " "
Rheumatic valvulitis, chronic	18	12% " "
Infectious mononucleosis	1	15% " "
Arthritis, chronic infectious	9	10% " "
Peptic ulcer	34	10% " "
Lues (tertiary)	41	9.7% " "
Arthritis, chronic hypertrophic	20	7.6% " "
Diabetes mellitus	36	7.4% " "
Pellagra	1	4% " "

Margins in medicine are indeed small, and seemingly insignificant deviations quite often prove to be of profound importance when carefully studied. It becomes increasingly obvious to the physician that nothing ever must be taken for granted. Above all else, being father confessor, family friend, protector and even priest, he must essentially be of a scientific mind. Each patient is a complete and separate entity, presenting a problem and a challenge which in the light of analytical study will reveal inevitably at least one unsuspected finding.

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COMPOUND FRACTURES.*

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In the last two years there has been increasing interest in the treatment of compound fractures. Trueta, in an excellent monograph, reported his results on what is perhaps the largest series of cases on record; i. e., over 5,000 cases of war injuries treated during the recent Spanish Insurrection. A host of

other excellent men from various parts of the country have also written enlightening papers on this subject. As before, there still seems to be two schools of thought. One in favor of the open treatment; the other, advocating the closed, and despite marked progress in various aspects of the treatment, the two schools cannot agree.

*Read before the Albemarle County Medical Society.

Recently the Orthopedic Department of the University of Virginia Hospital published their results of the treatment of over 250 cases of compound fractures over a seven-year period.¹ In the first three years of that period one-half of the total cases were treated by set method which included the use of iodine and alcohol in the wound. In the remaining period, the same method prevailed, except that we substituted saline for the iodine and alcohol.

It is interesting to note the method we use agrees with those used in most of the other clinics except for one or two details. Wounds treated during the period up to eight hours after the occurrence were, if possible, closed. Those seen after eight hours were, with a few exceptions, treated by the open method.

Our results were tabulated and compared to the statistics accumulated elsewhere. We were surprised to find that our percentage of infections was less than most places, while our percentage of primary healing was better than most of the clinics using the open method. Our incidence of gas gangrene was likewise low despite the fact that this section of the country is notorious for the high rate of gas infection. In 1934 Stone and Holsinger² reported an incidence of 12.3 per cent of gas infection in a series of compound fractures seen here over a twelve-year period. Our incidence was 3.6 per cent.

Our results are not offered boastfully. We merely wish to refute any attempt at dogmatism. We rather hope to further cut our incidence of infection and gas involvement by the local use of sulfanilamide.

(A) INFECTIONS IN CASES SEEN DURING EIGHT HOUR PERIOD

Infection	Tetanus	Gas	Non-Union	Delayed Union	Primary Healing
4.6	4.90	3.6	1.8	3.70	59%

Inasmuch as our cases are handled by an ever-changing house staff, we attempt to follow a set routine.

On entrance into the hospital, the patient's clothes are removed and a thorough examination is done. Shock is immediately combated by the application of splints to the injured area, use of the shock position, warm blankets, morphine and fluids when indicated. X-rays, though not always necessary, are taken because of medico-legal reasons. A portable unit is used, if the patient cannot be moved.

When the patient is out of shock, he is taken to

the Operating Room, where the wound is covered with a sterile dressing. Anesthesia, either spinal or general, is administered. The extremity is shaved; the skin about the wound scrubbed well with soap and water for about ten minutes. Care is taken to keep the wound covered during the former procedures. The sterile bandage is then removed from the wound and the latter is gently washed with sterile warm water. Gross dirt and clots are picked out. The skin is then painted with iodine and alcohol, care being taken not to get any into the open wound.

The extremity is draped, following the usual operating room procedures. Two sets of instruments are used; the first set for the preliminary debridement and the second for the closure.

Debridement is now begun, contused skin edges and all devitalized tissue are removed. All foreign material and clots are picked out and crushed muscle is removed by sharp dissection. Bone that is attached to the periosteum is not removed. It is important to see that the recesses of the wound are opened as these areas are breeding grounds for the gas bacillus as well as other organisms.

The wound is then irrigated with two to four quarts of sterile normal saline. We use an ordinary infusion outfit, being careful to keep the bottle just above table level. This precludes developing a fluid pressure great enough to wash dirt back into the muscle planes. The saline is used only for its mechanical flushing effect.

We now discard the dirty instruments, change the drapes, and use clean gloves and gowns. Sterile sulfanilamide crystals are placed all over the wound and between the bone fragments. Care is taken not to allow the powder to collect in any great quantity at any one place as there is a tendency for this to excite a foreign body reaction.

The extremity is manipulated and, if necessary, and only if necessary, metal fixation is used. If the wound can be closed without tension, a minimum of suture material is used for this purpose. No drains are placed. A snug, lightly padded cast is applied.

The patient is given prophylactic gas and tetanus serum and sulfanilamide orally. We have also been using x-ray therapy as a prophylactic agent against the gas bacillus.

All cases are hospitalized and watched carefully.

In a recent issue of *The Journal of the A. M. A.*, Thompson³ wrote his Ten Commandments for the Treatment of Compound Fractures. One was to

leave all wounds open and another was to use a 2 per cent aqueous solution of pectin in the wound. Orr, in another paper, absolutely forbid the use of suture material in or about the compound wound.

On the other side of the fence, Jensen⁴ and his co-workers report 4 per cent infection in a series of forty-six cases treated by the closed method. They had no gas infection. Jackson⁵, using sulfanilamide in fifty-four cases had 5.6 per cent infection and likewise no gas infection. Venable of Texas, Key of St. Louis, Koch of Chicago, and many others report very excellent results with the closed method. One cannot just disregard these reports.

In answer to those who refer to Trueta's large series of cases, it must be remembered that most of his cases were war injuries caused by high explosive shells and aerial bombs. In these injuries great areas of tissue were torn away and primary closure was impossible. Time also was a highly important factor. Civil injuries on the other hand are usually of two types, fractures from within with little or no loss of tissue and fractures from without, which often do carry away tissue. The latter are, in a majority of cases, probably best treated by the open method.

1. In conclusion, I feel that primary closure with the use of local sulfanilamide in a large number of compound fractures is the procedure of choice. Anybody can leave a wound open. One should not be confused by comparing war injuries to civil injuries.

2. Sulfanilamide is only an adjunct, not a means in itself, in treating these cases. We⁶ have proven experimentally that sulfanilamide, when placed in a wound in which devitalized tissue is left, has practically no effect.

3. We⁷ have experimentally been able to grow the *Staphylococcus* in a broth culture saturated with sulfanilamide. For this reason we prefer the sterile ampules of powder.

4. Care must be taken not to mistake bacteriological gas infection for clinical gas infection. The former is usually harmless.

5. Debridement is probably the most important step in the treatment of compound fractures.

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Military and Naval Section

The following have been added to the list of

Examining Physicians on Local Boards

Dr. J. L. Alexander, Staunton.
 Dr. James P. Baker, Richmond.
 Dr. Thomas Beath, Richmond.
 Dr. James F. Blades, Richmond.
 Dr. A. Gilbert Blakey, Goochland.
 Dr. E. P. Bray, Jr., Richmond.
 Dr. Ashby Coleman, Bastian.
 Dr. A. C. Davis (Col.), Hampton.
 Dr. J. L. Davis, Waynesboro.
 Dr. Percy Whilt Dreifus, Yorktown.
 Dr. E. M. Ellerson, Waynesboro.
 Dr. Francis P. Floyd, Waynesboro.
 Dr. Charles C. Freed, Waynesboro.
 Dr. A. B. Gathright, Richmond.

Dr. M. T. Garrett (Col.), Waynesboro.
 Dr. James T. Gill, Richmond.
 Dr. J. M. Habel, Suffolk.
 Dr. H. T. Hawkins, Waynesboro.
 Dr. Richard S. Herring, Richmond.
 Dr. Oscar L. Hite, Richmond.
 Dr. J. F. Hubbard, Waynesboro.
 Dr. J. G. Jantz, Bedford.
 Dr. C. Kirtner Johnson, Staunton.
 Dr. G. F. Johnson, Charlottesville.
 Dr. Lawrence B. Kelleher, Richmond.
 Dr. E. M. LaPrade, Richmond.
 Dr. Kinloch Nelson, Richmond.
 Dr. Dan O. Nichols, Charlottesville.
 Dr. M. E. Owens, Richmond.
 Dr. Barney Plotnick, Richmond.
 Dr. Wm. B. Porter, Richmond.

Dr. E. A. Powell, Madison.
 Dr. Thos. G. Pretlow, Chester.
 Dr. Theron R. Rolston, New Hope.
 Dr. J. T. Rountree, Woodstock.
 Dr. Albert Russo, Salem.
 Dr. M. P. Rucker, Bedford.
 Dr. E. W. Stratton, Jr. (Col.), Charlottesville.
 Dr. M. C. Stuart, Jr., Winchester.
 Dr. H. St. Geo. Tucker, Richmond.
 Dr. V. A. Turner, Staunton.
 Dr. Harry Walker, Richmond.
 Dr. D. Edward Watkins, Jr., Waynesboro.
 Dr. B. K. Weems, Waynesboro.
 Dr. J. P. West, Bedford.
 Dr. George W. White (Col.), Richmond.
 Dr. E. B. J. Whitmore, Jr., Staunton.
 Dr. W. S. Whitmore, Staunton.
 Dr. Robert H. Wright, Jr., Phoebus.
 Dr. Thomas P. Davis, Jr. (Col.), Hampton.
 Dr. E. Y. Lovelace, Jr., Bedford.
 Dr. Chester W. Powell, Waynesboro.
 Dr. Edwin M. Pilcher, Chester.

Medical Reserve Officers

In addition to those previously reported through the MONTHLY, the following doctors have been ordered to extended active duty by the War Department, Washington:

Lieut. Robert W. McCullough, Charlottesville.
 Lieut. Gilman Rackley Tyler, Richmond.
 Lieut. James O. Burke, Richmond.

The following have been ordered to extended active duty by the commanding general of the Third Corps Area:

Capt. Henry Louis Bastien, Arlington—Ft. Belvoir.
 Capt. Herman H. Hines, State Farm—Ft. George G. Meade, Md.
 Capt. Earle C. Gates, Chesterfield—Indiantown Gap Military Reservation, Pa.
 Lieut. George Cooper, Jr., University—Ft. Eustis.
 Lieut. William H. Kaufman, Charlottesville—Ft. Eustis.
 Lieut. George E. Snider, Richmond—Camp Lee.
 Lieut. Daniel Coleman Booker, Richmond—Ft. Eustis.
 Lieut. Charles H. Dow, Chilhowie—Ft. George G. Meade, Md.
 Lieut. George S. Fultz, Butterworth—Camp Lee.
 Lieut. Brainard E. Hines, Richmond—Ft. George G. Meade, Md.
 Lieut. Robert P. Meyers, Richmond—Ft. Story.
 Lieut. H. Grant Preston, Harrisonburg—Ft. Story.
 Lieut. H. M. Dalton, Charlottesville—Indiantown Gap Military Reservation, Pa.

Promotions

Major Richard A. Bowen, Richmond, has been promoted to Lieutenant-Colonel. He is on duty with the Medical Corps of the 176th Infantry Regiment at Fort George G. Meade, Md.

Orders Revoked

Capt. John N. Dunn, Blackstone.
 Capt. Henry G. Steinmetz, Arlington.
 Lieut. Manfred Call, III, Richmond.
 Lieut. George S. Fultz, Jr., Butterworth.
 Lieut. Edward A. Mitchell, Clinchco.
 Lieut. George E. Snider, Richmond.
 Lieut. Wm. D. Chase, McLean.
 Lieut. H. Grant Preston, Harrisonburg.
 Lieut. Chas. W. Warren, Upperville.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for June, 1941, compared with the same month in 1940 and for the period of January through June, 1941, compared with the same period in 1940 follows:

	JUNE		JAN.-JUNE	
	1941	1940	1941	1940
Typhoid and Paratyphoid Fever	14	13	72	65
Diarrhea and Dysentery	392	96	667	447
Measles	2,825	996	32,570	3,124
Scarlet Fever	47	110	882	1,011
Diphtheria	30	25	214	288
Poliomyelitis	2	2	13	8
Meningitis	8	8	66	46
Undulant Fever	1	2	7	9
Rocky Mountain Spotted Fever	1	6	9	9
Tularemia	0	3	18	28

NUTRITION AND HEALTH

The fundamentals involved in applying the science of nutrition to the human being are of recent origin. Many laboratory discoveries yet are to be substantiated through research work now being conducted in numerous places.

Unlike pellagra, scurvy, beri-beri, and rickets, the signs and symptoms of which are clearly defined and easily recognized, borderline nutritional deficiencies as clinical entities are difficult to establish, assuming that the physician is given an opportunity to make a diagnosis. Most malnourished people rarely consider themselves ill enough to seek medical advice.

Physiologists, chemists and clinical investigators have made available additional information to physicians who consequently are better able now to

handle nutritional problems than ever before. Interest in the subject on the part of the medical profession is becoming more marked. As is well known, discussion of some aspect of nutrition now occurs frequently at medical society meetings; and numerous articles on this subject are to be found in the current medical journals.

Efforts to combat malnutrition both on the part of the private practitioners and public health officials should be directed to all classes and to all ages. Particular emphasis should be placed upon the early development of the child, including that of the mother during the prenatal period. Young women experiencing pregnancy, especially for the first time, seem to be more receptive to health teaching than at any other period. Full advantage should be taken of the opportunities which the prenatal period offers for nutritional instruction.

No matter how much is done about the nutrition of the school child through adequate lunch service at school, so long as candies and soft drinks are readily accessible while at school or through lack of parental discipline, malnutrition will continue to be a problem. The family physician, can continue to emphasize this and other nutritional facts to parents. As is known, children in the higher income group sometimes show the same nutritional disturbances as those in the lower levels. In both cases the cause likely is to be the wrong selection of foods or the use of proper foods at the wrong time.

In common with the practicing physician, public health officials are interested in the prevention of food deficiencies. The general public is inclined to accept nutritional suggestions for hearsay. The present popular trend definitely and generally is towards vitamins, in contrast to the former enthusiasm directed toward calories. The doctor, on the other hand, justifiably is only as rapid in prescribing vitamin concentrates as he feels is compatible with some certainty of results. He knows that in most cases the proper way to approach this problem is through dietary means, and not through the use of super-concentrated drugs and pills. As the medical profession well appreciates, changes in food habits are frequently indicated for many families.

The Virginia State Department of Health contemplates the employment of a nutrition consultant in the near future, thus making specialized assistance available to its nurses. Likewise, the Depart-

ment's dentists will further stress nutrition in connection with the dental services for school children.

In short, while the problem of nutrition in the mass now is accepted as a public health responsibility, leadership in promoting this subject so far as individual family groups are concerned still rests with the family physician.

Mental Hygiene Activities

During the early part of the year the programs sponsored by the Mental Hygiene Society of Virginia emphasized mental hygiene of adolescence. This emphasis has rather rapidly shifted to the mental hygiene problems associated with national defense. This has been a logical and well worth-while change, for the part that this country should and will take in the present world crisis is uppermost in the minds of all citizens.

The very nature of democracy, with its freedom of thought and the non-restriction of speech, practically precludes a unanimity of opinion, and of course freedom of speech makes it possible for persons to express publicly their discordant views regardless of how illogical or without basis they may be.

Then too there will always be those who are willing to listen to and read about these discordant views largely because they tend to satisfy their "wishful thinking", and they do not stop to analyze these views against the facts.

Under such conditions "National Morale" becomes a topic of extreme importance. The Mental Hygiene Society has rendered a major service to the citizens of Virginia and the country at large by sponsoring a portion of the program of the Institute of Public Affairs, just recently closed at the University of Virginia.

The general theme of this portion of the program was "National Morale", and Drs. Harry Stack Sullivan, Karl Menninger and C. Macfie Campbell and Mr. Edmund Taylor, all men of great knowledge, gave very excellent addresses.

Dr. Sullivan told of the problems associated with the Selective Service for National defense. He pointed out that individuals with neurotic tendencies, personality disorders, or intellectual defects are un-

able to meet the stresses of army life but that they most certainly have a place in the program of national defense. He stressed particularly that the people of the community should not criticise rejected individuals and emphasized the place of mental hygiene in their proper placement and adjustment.

Dr. Menninger defined civilian morale in this particular crisis as "the maintenance of what we like to regard as the normal spirit of optimism, courage, single-mindedness as to national aims, loyalty to the government, to the cause espoused by the government and to the allies of the government."

Dr. Campbell developed the thought that the National Morale is a composite picture of the morale of its citizenry. He said, "The ability of a nation, as of an individual, to meet a physical or moral emergency will depend upon previous habits of physical and moral exercise. If not in training, the individual exposed to the physical test may soon be out of breath; if his moral faculty has become rather flabby a spiritual challenge may find him inadequate; he may easily become irresolute and discouraged and compromise with his conscience."

Mr. Taylor, who has had very close contact with the German propaganda techniques, disclosed how many American citizens and some newspapers are unwittingly or otherwise, materially assisting Germany to undermine and destroy the morale of this country. The engendering of fear and the development of a state of indecision are the ultimate aims of such propaganda techniques. If our democratic form of government is to survive, and I am sure it is the desire of a great majority that it do so, we must become more unified in the support of our well chosen national leaders. Such unified support will make it much easier for them to do the right thing at the right time.

Indecision is definitely mental disorder and may well develop into frank mental disease. The Mental Hygiene Society of Virginia continues its efforts to reduce the incidence of mental disorder and mental disease.

JOSEPH E. BARRETT.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgement of re-

ceipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Start Today. Your Guide To Physical Fitness. By C. WARD CRAMPTON, M.D., Major, Medical Reserve Corps, United States Army; Formerly Director of the Department of Physical Education and Hygiene, New York Board of Education; etc. New York. A. S. Barnes and Company. 1941. xxii-224 pages. Illustrated. Cloth. Price \$1.75.

Play For Convalescent Children in Hospitals And At Home. By ANNE MARIE SMITH, Staff Instructor, Leaders' Training School, Community Recreation Service, Chicago, Illinois. A. S. Barnes and Company. 1941. xviii-133 pages. Cloth. Price \$1.60.

Infantile Paralysis. A Symposium Delivered at Vanderbilt University, April 1941. Published by The National Foundation for Infantile Paralysis, Incorporated, New York City. Waverly Press, Inc. Baltimore, Md. 1941. vii-239 pages. Cloth.

X-Ray Therapy of Chronic Arthritis. (Including the X-Ray Diagnosis of the Disease). Preliminary Report Based on 100 Patients Treated at Quincy, Illinois. By KARL GOLDHAMER, M. D., Associate Roentgenologist, St. Mary's Hospital and Quincy X-Ray and Radium Laboratories; etc. Radiologic Review Publishing Company, Quincy, Ill. 1941. 131 pages. With 24 original illustrations, two roentgenograms, and four tables. Cloth. Price \$2.00.

Essentials of Endocrinology. By ARTHUR GROLLMAN, Ph.D., M.D., Associate Professor of Pharmacology and Experimental Therapeutics in the Medical School of the Johns Hopkins University; Formerly Associate Professor of Physiology and Instructor in Chemistry in the same Institution. Philadelphia. J. B. Lippincott Company. 1941. Octavo of xvi-480 pages. 74 illustrations. Cloth. Price \$6.00.

This book stresses the clinical aspects of endocrinology, reviewing briefly the anatomy, histology, physiology, and pharmacology of the endocrines. The author's standing as an investigator in endocrinology is sufficient recommendation for the accuracy of the material, and it will prove well worthwhile to any physician interested in this field. Some interesting inclusions are the structural formulae of the hormones, a brief note concerning the hormones of the gastro-intestinal tract and some presumptive hormones such as the heart hormone. A table of the frequency of appearance of endocrine diseases at the Johns Hopkins hospital over a period of years is included, some of which in their order of frequency are diabetes, hyperthyroidism, hypothyroidism, adrenal insufficiency, adenoma of hypophysis, tetany, pituitary insufficiency, etc. However, one is surprised that out of the large number of cases there was only one case of female hypogonadism. A list of commercial preparations of the endocrines is included on the front and back covers.

However, the sex hormone preparations have not been covered nearly so well or completely as has been done by the late Doctor Crockett (this journal, 67:732-739, 1940).

The reviewer misses under the discussion of ovulation, mention of the peak of gonadotropin excretion which consistently occurs in the normal female, and is believed to have some association with ovulation. This peak might also have been included in the curve illustrating the hormonal interplay in menstruation.

In spite of these minor criticisms, this is an excellent, complete, and up-to-date book.

R. J. M.

The Avitaminoses. The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By WALTER H. EDDY, Ph. D., Professor of Physiological Chemistry, Teachers College, Columbia University; etc. And GILBERT DALLDORF, M. D., Pathologist to the Grasslands and Northern Westchester Hospitals, Westchester County, N. Y. Second Edition. Baltimore. The Williams and Wilkins Company. 1941. Octavo of xiii-519 pages. Cloth. Price \$4.50.

The reviewer considers this book a valuable addition to the vitamin field. It covers the chemical constitution of the known vitamins as well as the clinical and pathological aspects of the vitamin deficiency diseases. It is divided into two parts—*Part I*, The Vitamins and Avitaminoses; *Part II*, Methods of Studying Avitaminoses and The Vitamin Content of Foods.

Each of the vitamins known to play an important role in human nutrition is discussed in considerable detail from five viewpoints; (1) Chemical structure; (2) Nature and function; (3) Clinical and pathological changes in the deficiency state; (4) Requirements; and (5) Distribution in food stuffs. In addition one chapter is devoted to laboratory tests useful in the diagnosis and study of deficiency disease. In this book the authors have presented in a comprehensive but condensed form the enormous literature on vitamins which is of most general interest to the physician and pathologist. The morphological changes noted in various avitaminoses are discussed in detail. Many photomicrographs illustrating the pathological changes noted in avitaminoses are included. The book should prove a most valuable aid to all interested in nutrition or clinical aspects of vitamin deficiencies.

J. C. FORBES.

Methods for Diagnostic Bacteriology. A Complete Guide for the Isolation and Identification of Pathogenic Bacteria for Medical Bacteriology Laboratories. By ISABELLE G. SCHAUB, A.B., Assistant in Bacteriology, Department of Pathology and Bacteriology, The Johns Hopkins University School of Medicine. And M. KATHLEEN FOLEY, A.B., Bacteriologist in Charge of the Diagnostic Bacteriological Laboratory of the Medical Clinic, The Johns Hopkins Hospital. St. Louis. The C. V. Mosby Company. 1940. 313 pages. Cloth. Price, \$3.00.

This book will find a useful place in the field of diagnostic bacteriology. The number of standard textbooks available more than adequately cover the fundamental and theoretical aspects of bacteriology. The hospital bacteriology laboratory is called upon to carry out a variety of examinations and the importance of rapid, accurate diagnosis need not be elaborated upon. This test incorporates as one of the authors states "the tricks of the trade"—essential for carrying out these procedures.

Not all of the procedures will find equal use in other laboratories, but this volume is an admirable start toward a standard procedure for diagnostic laboratories.

J. DOUGLAS REID.

An Introduction To Dermatology. By RICHARD L. SUTTON, M.D., Sc.D., LL.D., F.R.S. (Edin), Emeritus Professor of Dermatology, University of Kansas School of Medicine. And RICHARD L. SUTTON, JR., A.M., M.D., L.R.C.P. (Edin), Assistant Professor of Dermatology, University of Kansas School of Medicine. Fourth Edition. St. Louis. The C. V. Mosby Company. 1941. Octavo of 904 pages. With 723 illustrations. Cloth. Price \$9.00.

The following statement is taken from the preface of this edition, "This book is intended for students, collegiate and postgraduate, contains a review of dermatology sufficient to outline the scope of the specialty beyond provincial boundaries. It contains considerably more than a student may encompass, but he can read less of it."

This edition is a condensed volume of the larger tenth edition, plus a review of the important dermatological literature since 1939. All descriptions are clear and concise. There is a well selected bibliography. The book is well illustrated and it is printed on excellent paper. It may be highly recommended to students, general practitioners, and those limiting their practices to dermatology and syphilology.

ALLEN PEPPE, M.D.

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Editorial

The Internship.

It will not be surprising to those who are aware of the rapid changes through which medicine is passing to discover that the internship is very different from what it used to be.

In the early days the young Lydgate was a "house doctor", a "resident physician" or a "house pupil". Not until after the Civil War did the term "intern" come into common use. The old internship of two years, with six months in the laboratory, six months as a junior intern, six months in the specialties, and six months as a senior house officer, presumably fitted a man for anything. If he was lucky enough to serve in a large municipal hospital he saw a riot of diseases, chiefly in the advanced stage, and went out rather cocky about what he could do. It was natural for him to feel and act that way, because many of his fellow graduates went straight into practice without any such experience. The man with the good internship behind him perhaps had a right to feel his superiority.

Times have changed. The internship as viewed today has two objectives: (1) the rounding out and practical application of a medical school course, and (2) the training of a man to accept responsibility. The length, content and character of the internship today depends upon this concept. It is really a continuation of the clinical clerkship with

added responsibility. It is the time for continued fundamental work in medicine, the time to develop life habits of study and permanent professional attitudes. The modern internship is designed to fit a man for general practice, or for the residency which in turn leads to specialization. There are today several recognized categories of the internship.

There is first the rotating internship in which a man rapidly in the course of a single year passes through medicine, surgery and the various specialties. In the United States more than 6,000 young doctors enter such internships each year. They constitute two-thirds of the total number of positions available. There is, however, the danger that this type of internship may be carried to an extreme with rotation occurring as often as every three weeks, affording little more than a nodding acquaintance with the specialties concerned. There are still a few straight internships, about 500 of them. They are regarded as a proper intermediary between the rotating internship and the residency. There are also mixed internships. There is now a new type under discussion known as the "case internship", in which a man follows one case through the outpatient department and the various services of the hospital as often as that patient is admitted to the hospital during his term of service. He even visits such patients in their homes. The type of internship,

however, which is looked upon with greatest favor has been called the "general internship". It is based upon the principle that the intern should spend most of his time in general medicine, pediatrics, obstetrics, surgical diagnosis, minor surgery and first aid. The day is considered past when an intern should spend his time learning the special techniques of the specialties. It is believed that he learns most about the specialties by consultation with specialists in the general wards of the hospital.

Ideally the modern intern should be taught to view the patient as a whole, his mental as well as his physical state, his environment and his reaction to it, as well as the pathologic changes responsible for symptoms and signs. For this sort of instruction, the clinical professor who does not live the cloistered life, who rubs elbows with a variety of sick people, visits them in their homes, takes time to talk over their woes with them in his office, is best fitted.

The intern's assignment to the outpatient department offsets the one-sidedness of hospital practice where only disease in its advanced stage is encountered. In the outpatient department the intern develops an awareness of disease in its incipency and in its more chronic manifestations and learns neither to fear, to scorn nor to neglect the victims of life long disability.

The hospital occupies the key position in the education of medical student, intern and resident. Its obligation to provide a program with an adequate educational content for interns is unquestioned. Unless such a purpose is systematically and enthusiastically carried out the internship is not worth much. To develop such a program properly the hospital should employ a qualified man to act in the capacity of Director of Intern Education. On the other hand the medical school's responsibility does not cease with the graduation of its students. It should see that the holders of its degrees secure internships of the proper character, and it should cooperate with neighboring hospitals (many of them not connected with a medical college) in the establishment of adequate educational programs for their interns.

In the modern hospital the intern no longer rides the ambulance, administers anaesthetics, serves as admitting officer, or performs routine laboratory work. The hospital should employ salaried men for these chores and should not waste the valuable time of interns on them.

An intern should have responsibilities but he should not be left to his own devices without supervision by residents and staff officers. He should be busy but not overworked. A case load of eight to ten patients, or the admission of a patient a day, is enough for any man. By the time he has taken a history and made a physical examination, done the special laboratory work on the patients in which he is interested, attended an autopsy or two, supervised medical students, made routine ward rounds, taken care of the daily emergencies to which he is summoned, attended organized ward rounds by his chiefs, listened in on one or two consultations with specialists, attended a clinical, a clinicopathologic, clinicophysilogic, radiologic, or medicopsychiatric conference, a staff meeting or a journal club, looked up some subject in the Index Medicus, thumbed through the latest medical journals, read several articles to which he is attracted, kept his daily log, written the reports required of him, talked with his staff adviser and perhaps been in conference with the Educational Director of Interns, he deserves a game of ping pong or an hour on the handball court, and sometimes an afternoon off for golf. If his hobby is the humanities or some other cultural activity he should now and then have an opportunity to find recreation in them.

The American Medical Association Recognizes the General Practitioner.

At the last meeting of the American Medical Association the House of Delegates voted the creation of a new section on General Practice. Although there had been for a long time agitation for such a section, the move came with unexpected suddenness. It is perhaps a good thing that general practitioners attending the meetings of the American Medical Association in the future will find a section in which they can be at home, untrammelled by the "high-brows" and the technical jargon of specialists and full-timers. Perhaps it is another step in the direction of the setting-up of another category of certification, and the time may soon be expected when on the walls of the general practitioner's office will hang a diploma certifying to the fact that he is not an obstetrician, not a gynecologist, neurologist, psychiatrist, pediatrician, cardiologist, gastro-enterologist, syphilologist, allergist, dermatologist, roentgenologist, or otorhinolaryngologist, or even an internist, but just a doctor, a darn good one you can be sure.

Warning.

No part of William L. Shirer's *Berlin Diary* (New York, Alfred Knopf, 1941) will be more arresting to medical men than the two entries, *Berlin, September 21, 1940*, and *Berlin, November 25, 1940*, relating to the "mercy killings" of the insane that are believed to have taken place in the Reich with administrative sanction, some say to the number of 100,000. In explanation it is suggested that they are carried out to save food, to experiment with new poison gases and death rays, to forward the sociologic and eugenic ideas of Nazi extremists, to release able bodied Germans caring for institutional cases (one for every three or four patients), and to afford hospital space for war wounded. Whatever the reasons for them, if these murders are being committed as Shirer believes, it must be concluded in

his words: "It's a Nazi, messy business". It will be abhorrent to Medicine as to the Church that has already protested. The Vatican on December 6, 1940, stated that "the killing of those who, although they have committed no crime worthy of death, nevertheless are considered no longer useful to society or the state because of physical or mental deficiencies, is contrary to both natural and divine law".

While some may doubt Shirer's story of horror, none may doubt that uncontrolled power in the hands of one man or party could make such a horror possible. American medicine will find in the accomplished fact or imagined fiction one more cogent reason to bend its efforts, individual and corporate, to forbid an entry of dictatorship upon the shores of America and its own sacred domain.

Department of Clinical and Medical Education of the Medical Society of Virginia

Summer Short Course.

The second summer short course in medicine was held at the University of Virginia during the week of June 16-21, 1941. Twenty-eight members of the faculty of the Department of Medicine took part in the instruction. In addition Dr. Warfield M. Firor, Associate Professor of Surgery, Johns Hopkins Medical School, and Dr. Walter O. Klingman, Associate in Neurology, College of Physicians and Surgeons, were on the program. The morning sessions were devoted to lectures while the afternoon was given over to clinics and ward rounds. Evening meetings consisted of conferences, lectures, round-table discussions and a banquet.

The following doctors attended the course:

Dr. S. K. Ames, Cape Charles.
Dr. F. L. Byers, Harrisonburg.
Dr. Glenn C. Campbell, Staunton.
Dr. J. G. Cox, Hillsville.
Dr. A. B. Grubb, Cripple Creek.
Dr. Percy Harris, Scottsville.
Dr. C. W. Hickam, Pulaski.
Dr. H. G. Hudnall, Covington.
Dr. M. B. Jarman, Hot Springs.
Dr. N. B. Jeter, Covington.

Dr. Joseph H. Low.
Dr. J. C. McCluer, Alexandria.
Dr. H. C. McCoy, Gordonsville.
Dr. A. M. McLaughlin, Waynesboro.
Dr. Joseph L. Mann, Hampton.
Dr. E. R. Moorman, Kilmarnock.
Dr. W. A. Murphy, Staunton.
Dr. E. F. Neal, Altavista.
Dr. Dan O. Nichols, Charlottesville.
Dr. W. R. Pretlow, Warrenton.
Dr. V. W. Quillen, Nickelsville.
Dr. A. C. Ray, Jr., Ashland.
Dr. A. C. Ray, Sr., Lynnhaven.
Dr. Paul Revercomb, Charleston, W. Va.
Dr. John E. Roberts.
Dr. L. G. Roberts, Moormans River.
Dr. Alex Robertson, Staunton.
Dr. E. B. Robertson, Danville.
Dr. Elizabeth Sherman, Front Royal.
Dr. Frank E. Tappan, Berryville.
Dr. George A. Torrence, Hot Springs.
Dr. W. R. Warren, Woodberry Forest.
Dr. W. R. Watkins, South Boston.
Dr. B. K. Weems, Waynesboro.
Dr. M. J. W. White, Luray.
Dr. George C. Williams, Jewell Ridge.
Dr. Thomas V. Williams.

Local Short Course.

As previously announced, a short postgraduate course in Internal Medicine and Surgery was held at Leesburg at the request of the Loudoun County Medical Society during April and May. Speakers on the program came from the University of Vir-

ginia, Medical College of Virginia, and Duke University. Thirteen doctors from Loudoun County attended the course.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

Warwick County Medical Society.

At the annual meeting of this Society, Dr. O. C. Jones was elected president, Dr. H. W. Potter, vice-president, and Dr. Paul Hogg, secretary-treasurer. All are of Newport News.

The Fauquier County Medical Society,

At its meeting on May 28, elected the following officers: President, Dr. Henry L. Townsend, Marshall; vice-presidents, Drs. V. L. McCullers, Remington, and George H. Davis, Warrenton; and secretary-treasurer, Dr. William R. Pretlow, Warrenton (re-

-elected). Delegate and alternate to the State meeting were also named at this time.

The Lynchburg Academy of Medicine

Held its regular meeting on June 2 with Dr. Powell Dillard, president, presiding. Two local dentists, Drs. Clarence Garrard and Harry Shotwell, presented papers on "Factors Influencing Facial Form" and "Dental Infection and X-Ray Interpretation", which were thoroughly enjoyed by the members present.

C. E. KEEFER, *Secretary.*

News Notes

The State Meeting.

Plans are well under way for a meeting of outstanding interest at Virginia Beach, October 6, 7 and 8. The business sessions—Council and House of Delegates—will be held on Monday 6, so as to complete as much business as possible before the scientific sessions which are to commence on Tuesday morning. The Tuesday morning session will be a general one and will include an address by the President, papers by several members, and a pathological conference by Dr. Lewis Hamman of Baltimore. That afternoon, Colonel Norman Kirk, M. C., commanding officer of the Walter Reed Hospital, Washington, will be the guest speaker, and, following his address, there will be two sections for papers by members. The same plan will be adopted on Wednesday morning, with a gathering about noon to hear Dr. James R. Miller of Hartford, who will speak on an obstetrical subject. Dr. Henry Cave of New York will give a surgical address in the afternoon, following which there are to be four panel discussions—General Practice of Medicine, Surgery in Relation to General Practice, Pediatrics, and Obstetrics and Gynecology. These are to re-

place the Round Tables and it is believed will prove of much interest.

Tuesday evening will be free for alumni and special group dinners and meetings, and on Wednesday, a banquet with floor show and dancing will close the 1941 meeting.

Scientific and commercial exhibits, a hobby display, golf and tennis tournaments, swimming in the Cavalier in-door pool, and other amusements will add to the pleasure of those attending.

Make your reservations and plan to attend this meeting.

Tennis Tournament.

Plans are being made for a tennis tournament to be held during the meeting of the State Society. Matches will be played on Sunday, October 5, and on Monday, October 6, and a prize will be awarded.

Members interested in playing tennis are requested to notify the Society's office or Dr. B. E. Harrell, Medical Arts Building, Norfolk, Virginia, at least ten days before the meeting.

Dr. Wiley Davidson Lewis,

Formerly assistant superintendent of the Western

State Hospital, Tennessee, has joined the staff of Saint Albans Sanatorium in Radford. He is a graduate of the University of Tennessee College of Medicine and has recently completed a Fellowship in Neuropsychiatry at Adams House, Boston.

Dr. Allen W. Lane

Is located in Blackstone where he is engaged in general practice. He recently resigned as health officer of Pulaski County.

Dr. Alex. N. Chaffin,

Formerly at Catawba Sanatorium, is now with the Clinchfield Coal Company Hospital at Dante.

Dr. James H. Gressette,

Of the Staff of the Gill Memorial Eye, Ear, and Throat Hospital, Roanoke, has returned from Philadelphia after taking a special course in bronchoscopy and laryngeal surgery at the Graduate Hospital of the University of Pennsylvania.

Dr. T. J. Humphries,

Formerly of Culpeper, is now associated with Dr. E. Berkeley Neal in the practice of pediatrics, with offices in the Shenandoah Life Building, Roanoke. Dr. Humphries is a graduate of the Department of Medicine, University of Virginia, in 1938 and has been recently connected with its department of pediatrics.

Dr. S. A. Draper,

Formerly of Roanoke, is now located at 122 North Thornton Street, Orlando, Fla.

Dr. Herbert Carl Lee

Announces the opening of his offices in the Medical College of Virginia Hospital, his practice being limited to surgery. He has recently completed a residency in surgery at the College.

Dr. E. W. Perkins,

Richmond, was certified a Diplomate of the American Board of Ophthalmology at a recent meeting of the examiners in New York City.

Dr. Reuben F. Simms,

Richmond, was recently elected a vice-president of the Lions Club.

Dr. F. N. Mullen, Jr.,

Announces that he is now located at 203 Medical Arts Building, Norfolk. He has recently been at South Mill, N. C.

Dr. Lyddane Miller,

Formerly of Piney River, is now located for practice at Amherst Court House.

Dr. Louise Fry Galvin

Of Richmond has been appointed to the staff of the State Department of Health as pediatric consultant of the orthopedic division of the Crippled Children's Bureau and medical supervisor of the Department's Children's Rheumatic Fever Program.

Dr. Galvin is assistant professor of pediatrics at the Medical College of Virginia and has been practicing her speciality during the last six years in Richmond. She formerly was medical director of the Methodist Orphanage and of the Belle Bryan Day Nursery.

Southern Medical Association Announces Change in Days of Meeting.

The Southern Medical Association meeting will be held in St. Louis on Monday afternoon, Tuesday, Wednesday and Thursday, November 10-11-12-13, instead of Tuesday, Wednesday, Thursday and Friday forenoon, November 11-12-13-14, as previously announced.

The Association will open at noon on Monday, the registration beginning at that time, the scientific programs beginning at 2:00 P. M. and continuing through Tuesday, Wednesday and Thursday, all Association activities being concluded in the late afternoon of Thursday. The registration, scientific and technical exhibits, all clinical sessions, all sections and all conjoint meetings, will be held at the Municipal Auditorium.

The general session, open to the public, will be held on Monday evening; the general session for the address of welcome, the president's address and the report of council, followed by the president's reception and ball, will be on Tuesday evening; and the alumni reunion dinners will be on Wednesday evening, all these evening activities to be held at the Jefferson Hotel.

Dr. Coleman Resigns From University of Virginia Professorship.

Dr. Claud C. Coleman, who since 1937 has had the unique distinction of occupying two professorial chairs at the same time, one at the University of Virginia and one at the Medical College of Virginia, has resigned as Clinical Professor of Neurological Surgery in the Medical Department of the University of Virginia, effective August 1, 1941.

Dr. J. M. Meredith, who was Assistant Clinical Professor under Dr. Coleman, has also resigned. He becomes Associate Professor of Neurological Surgery at the Medical College of Virginia, and in the future will be associated with Dr. Coleman in his private work.

Dr. Crutchfield Assumes Professorship at the University of Virginia.

Dr. W. Gayle Crutchfield, who since 1937 has been Associate Clinical Professor of Neurological Surgery at the University of Virginia, has recently been promoted to the head of the department, succeeding Dr. C. C. Coleman, resigned. He will shortly move to Charlottesville to assume this new position. He will be missed in Richmond where he has held an assistant professorship in the Medical College of Virginia and been associated with Dr. Coleman in private work.

Dr. A. M. Showalter Elected Officer of Rotary International.

Elected an officer of Rotary International at the international convention held in Denver, Colorado, in June, Dr. A. M. Showalter, president and chief surgeon of the New Altamont Hospital in Christiansburg, took office on July 1 as a district governor of Rotary International. Unanimously elected by convention delegates representing the majority of the 212,000 Rotarians and 5,000 Rotary clubs of more than sixty countries of the world, Dr. Showalter will devote much of his time during the year to visiting each of the forty-four Rotary clubs of western Virginia which comprise his district.

News From the Medical College of Virginia.

Faculty promotions for the fiscal year beginning July 1, 1941, are as follows.

Dr. Webster P. Barnes, from associate in to assistant professor of surgery.

Dr. Guy W. Horsley, from associate in to assistant professor of surgery.

Dr. Lawther J. Whitehead, from assistant professor to associate professor of radiology.

Dr. Thomas D. Rowe, from assistant professor to associate professor of pharmacy.

Dr. Rudolf Thomason, from associate in to assistant professor of ophthalmology.

Dr. Delbert A. Russell, from assistant to instructor in radiology.

Dr. Edward A. Delarue, Jr., from assistant to instructor in medicine.

Dr. John P. Lynch, Jr., from assistant to instructor in medicine.

Dr. W. Hughes Evans, from instructor to associate in obstetrics.

Dr. W. C. Winn, from instructor to associate in obstetrics.

Dr. Walter J. Rein, from assistant to instructor in ophthalmology.

Dr. William A. Johns, from instructor to associate in surgery.

Dr. Robert V. Terrell, from instructor to associate in proctology.

Dr. E. I. Evans, from assistant to instructor in surgery.

Dr. John Robert Massie, from assistant to instructor in surgery.

Dr. Charles M. Nelson, from instructor to associate in urology.

Miss Edna J. Townsend, from instructor to associate in pediatric nursing.

Miss Mabel Blount, from assistant to instructor in dietetics.

Miss Harriet Stevens, from assistant to instructor in dietetics.

Dr. Allen Pepple, from assistant to instructor in dermatology and syphilology.

Dr. St. George Tucker, from assistant to instructor in medicine.

Miss Ann Parsons and Miss Edna Townsend, who have been on leave of absence for study returned to the school of nursing on July 1.

Dr. William T. Sanger, president, attended the Institute for Officials of Higher Institutions at the University of Chicago the second week in July.

The psychiatric floor of the new hospital opened July 21. Thirty-eight beds will be available.

The Association of American Medical Colleges has accepted the invitation of the college to hold its annual meeting here, October 27, 28 and 29.

Gifts and grants to the college for the fiscal year ending June 30, 1941, totaled \$366,844.34.

Southern Tuberculosis Conference Meets at Asheville.

Subjects to be discussed in the medical section of the Southern Tuberculosis Conference at Asheville, N. C., September 15, 16, and 17, include: Laryngeal Tuberculosis; Collapse Therapy in the Negro; Tuberculosis of Bone and Joints; Silicosis;

Relation of Tuberculosis to National Defense; False Security in an Apparently Effective Pneumothorax; Methods of Procedure following Ineffective Pneumothorax; Extra-Pleural Pneumothorax and Thoracoplasty; Isolation of the Open Case; Vitamins and Tuberculosis; Tuberculosis in Industry; Tuberculosis in the Aged; and Tuberculosis in Mental Hospitals.

A number of distinguished speakers have been secured to present the papers on this program, many of them being physicians of national reputation.

Dr. Joseph R. Blalock, Superintendent of Southwestern State Hospital, Marion, will present the paper on tuberculosis in mental hospitals.

The complete program of the conference may be had by writing the Virginia Tuberculosis Association, 504 Atlantic Life Building, Richmond. It is expected this will be ready for distribution about the first of August.

Married.

Dr. John Washington Clark, Front Royal, and Miss Sallie McArthur Mason, Ridgeway, June 24. Dr. Clark is a graduate of the Medical College of Virginia, class of '38.

Dr. Stanley H. Macht of Crewe and Miss Naomi Newman, daughter of Dr. and Mrs. Samuel Newman of Danville, July 1.

Dr. Alva Duckett Daughton, East Falls Church, and Miss Vera Alice Hanson, Richmond, July 18.

Dr. H. B. Webb,

Waynesboro, has recently been named physician in charge of the Community Hospital, in which capacity he will act as administrator as well as continue his practice.

X-Ray Unit For Sale—

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Obituary Record

Major Allen J. Black,

Medical Corps, U. S. Army, retired, died as a result of a heart attack at his home in Richmond June 25. He was a native of Salem and seventy-six years of age. Dr. Black graduated from the Medical College of Virginia in 1884, following which he practiced in Radford and Roanoke before entering the medical service of the army. He saw service in Cuba during the Spanish-American War, in the Philippines during the Insurrection, and in the World War, and was retired in 1928 because of physical disability. Dr. Black had been an interested member of the Medical Society of Virginia since 1884 and he was president of the Roanoke Academy of Medicine in 1909. His wife survives him.

Dr. Joseph Nicholas Applewhite,

Capron, died May 5. He was seventy-four years of age and a graduate of the Medical College of Virginia in 1895. Dr. Applewhite had been a member of the Medical Society of Virginia for thirty-seven years.

Dr. Richard Franklin Slaughter, Jr.

Augusta, Ga., died July 3 after an illness of six months. He was a native of Hampton, Va., and was thirty-five years of age. Dr. Slaughter practiced for a while at Norfolk but for the past four years has been in Augusta where he was head of the department of neuro-surgery of the University of Georgia Medical School. He was formerly a member of the Medical Society of Virginia.

Dr. Edgar A. Pole,

Who had practiced at Hot Springs for thirty-five years, died July 19 after a short illness. He was seventy-one years of age and a graduate of the former Baltimore Medical College in 1897. Dr. Pole had been a member of the Medical Society of Virginia for forty-three years. His wife and five children survive him.



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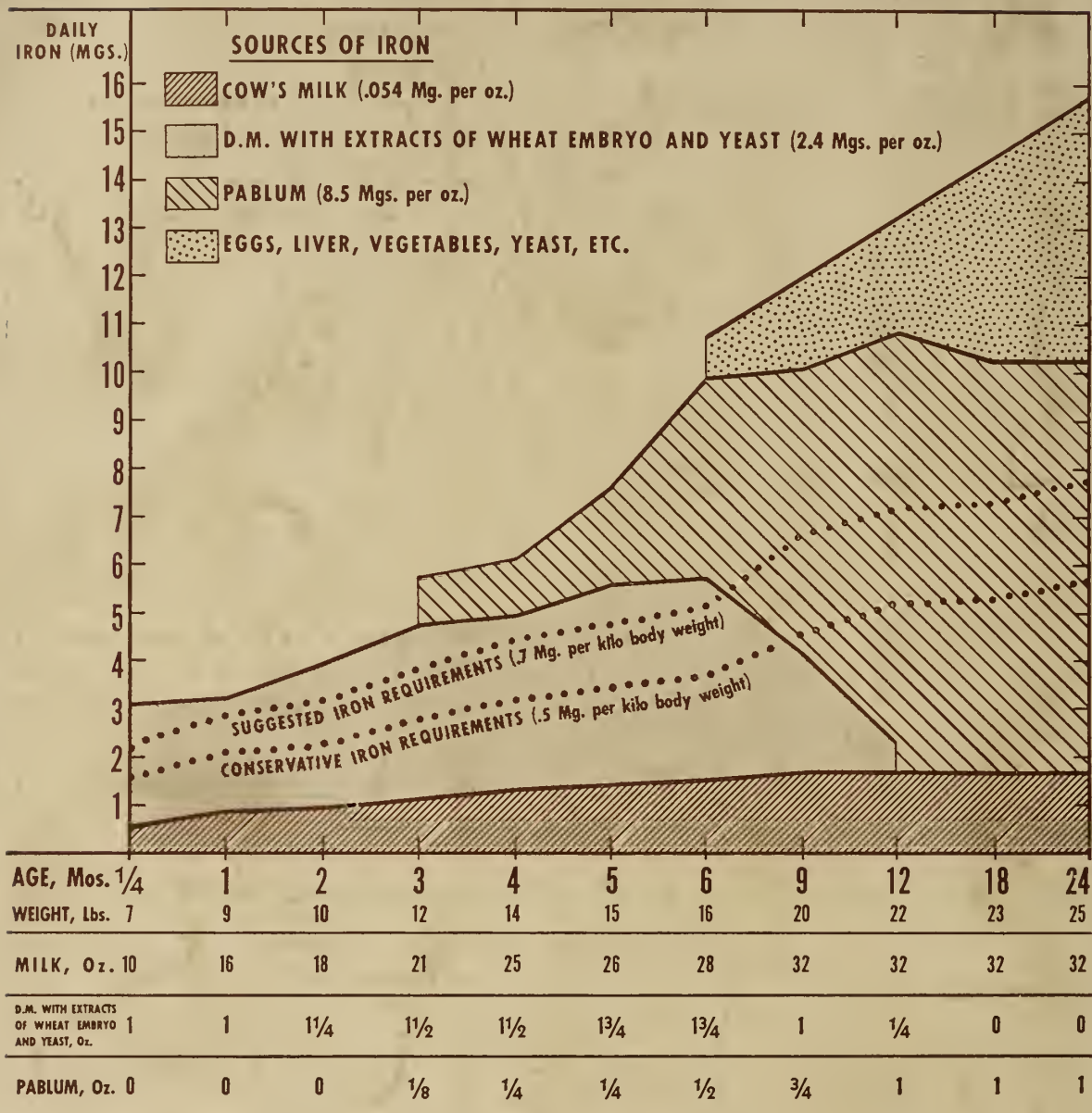
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not only during the important first six months, but throughout the first two years of life.

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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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Guest Editorial

What Can the Science of Bacteriology Do Now For the Art of Surgery?

The Science of Bacteriology made possible modern surgery sixty years ago and in the long period of medical history before that time the fear of infection stayed the hand of the surgeon who ventured into the interior of the body except in dire emergency. As soon as it was known that bacteria were responsible for those infections and that the contamination of operative wounds could be minimized, the scope of surgery began to widen and the development of operative technique began to flourish. Sterile operating room technique developed by gradual stages but when it was once established, it soon came to be taken for granted—a problem apparently solved. Gradually the debt which surgery owes to bacteriology has been forgotten.

The modern surgeon has acquired more exact anatomical knowledge in order to delve into the deep places of the body and he has ingeniously devised instruments to get into various nooks and crannies but he has largely forgotten the science that made his diversity of operative procedure possible. This can be seen in almost any hospital and will be acknowledged by many surgeons. No effort is made to determine the bacterial etiology in many cases of infection in the hospital wards. To many surgeons pus is pus and they are not as much interested as their forebears to determine whether the pus is "laudable" or not. In many hospitals there is no bacteriologist at all and the surgeons are satisfied with no bacteriology or the inexperienced reports of an untrained technician.

After some experience over a number of years in seeing cases of severe or unusual infection in various hospitals in and around New York City and in other cities, the writer has come to the conclusion that the criterion of an adequate bacteriological service for a surgical department is whether or not the laboratory is equipped and is ready and eager to make anaerobic cultures. It is a little more trouble and takes a little more time but the laboratories that can do these cultures will be really interested in making a bacterial analysis of all kinds of surgical infections and will be prompt in establishing the bacterial etiology of unusual types. Furthermore, a bacteriology laboratory should be prepared to give twenty-four-hour service for many times an immediate examination of a stained smear of an exudate or a prompt report from an overnight culture will determine the method of treatment and in some instances will save a life that would otherwise be lost. This requires a staff of bacteriologists or the adequate training of the interns or residents to carry out emergency procedures.

The recent development of new chemotherapeutic agents has emphasized the importance of determining as quickly as possible the bacterial etiology in any type of infection so that the appropriate drug may be used, sulfanilamide for the hemolytic streptococci, sulfapyridine for the pneumococci, sulfathiazole or bacteriophage for the Staphylococci and B. coli, zinc peroxide for the anaerobes, etc., etc. Good bacteriology prevents the hit or miss use of these drugs.

The surgical chief of any hospital which today has inadequate bacteriological service for its surgical department may with justice go to its board of trustees and demand adequate funds to pay the salary of a well-trained bacteriologist and to equip his laboratory. He can promise them that this will not only save lives but it will save many times over the cost of this service by the prevention of operative wound infections and epidemics among the patients and by shortening the hospital stay of many unusual cases of infection which in the absence of bacterial studies so often drag on until their finances are exhausted and they become charges on the hospital budget. Such a service will also contribute to the study of many problems of bacteriology and immunology still to be solved—the synergism and antagonism of bacteria, bacterial allergy, measurements of susceptibility and resistance to infection, the value of antiseptics, etc., to mention a few of these problems.

The American College of Surgeons has been asked to withhold approval from all hospitals which fail to give such adequate bacteriological service and it is hoped that this will stimulate all hospitals to raise their standards in this regard. There is no question but that this is urgently and very generally needed.

FRANK L. MELENEY, M. D.

Associate Professor of Clinical Surgery,
Columbia University (P. & S.), New York City.

PSYCHOTHERAPY OF CHILDREN.*

LEO KANNER, M.D.,

Associate Professor of Psychiatry, The Johns Hopkins University Medical School,
Baltimore, Maryland.

Learning is accomplished mainly through a process of trial and error. Children stumble and stagger while they seek proficiency in erect locomotion. They spill food in their first attempts at self-feeding. They mispronounce sounds while they try to acquire acceptable diction. They have enuretic accidents during the transition between spontaneous and controlled elimination. They falter and blunder when they go through the novelty of establishing social contacts with family and playmates. Groping uncertainty precedes the achievement of skill, security and self-dependence.

Attainments are made possible by existing potentialities, furthered by the presentation of opportunities and removal of obstacles, and fashioned in accordance with patterns and directions. Inversely, delay of attainment and perpetuation of errors may arise from inherent variations in endowment, the reduction of favorable circumstances, and unhealthily oriented educational guidance. Unfortunately, training skill is not an incidental by-product of childbirth or of a teachers' college diploma. Training skill also is acquired through trial and error. Inexperience, misinformation, emotional needs and quandaries tend to wrap adult gropings and uncertainties around those of the child, with resulting inroads on family and classroom behavior. Increasing perplexity finds the parents in search of help. They usually turn to their natural adviser in matters of child care, the family physician.

It has been variously estimated that from 50 to 70 per cent of all children brought to pediatricians offer problems of behavior as the leading complaints. Puzzled parents come for advice regarding the eating, sleeping, and elimination habits of their offspring, real or assumed delay in the pace of development, display of fear, jealousy or anger, questions of emancipation and conformity, restlessness and other manifestations commonly spoken of as signs of "nervousness", and worry occasioned by poor progress or misconduct at school. At the Harriet

Lane Home, the children's department of the Johns Hopkins Hospital, there is a steady flow of referrals from the wards, outpatient divisions, and the private consultation unit to the Children's Psychiatric Service, which forms an integral part of the pediatric program and is engaged in case work, teaching and research alike. The children are not in any way preselected on the basis of suitability or unsuitability for a particular mode of investigative or therapeutic procedure. They come from the homes of the rich and the poor, from sophisticated and untutored families, with high and low intelligence quotients, with sound and variously affected bodies, accompanied by stable and unstable, worried and indifferent, calm and agitated, complaining, accusing and excusing elders. They are carried in by the waves and breakers of life itself. They all have in common the fact that parents, teachers, physicians, social workers, the children themselves, at all events *somebody* is disturbed or baffled about something pictured in performance, affect and group relationship. The children are brought with the expectation of practical and practicable help, which is the essence of the treatment hoped for.

People generally understand that treatment of physical disorders depends on the remedy of that which appropriate clinical and laboratory examinations have found to be at fault. This realization provides little ground for controversy and confusion. But when it comes to the issue of behavior and its ramifications, the non-psychiatrist finds himself often pathetically ensnared in a nightmarish network of opinions, claims, pronouncements, generalizations, theories and terminologies. The task, at the Harriet Lane Home, of teaching the principles of child psychiatry to pediatricians has for years involved the need for concreteness and clarification. The young physicians come with a refreshing eagerness to learn and at the same time a wholesomely challenging Missourian I-want-to-be-shown attitude. This attitude must not, with misplaced sensitiveness, be mistaken for aloofness, skepticism or resistance. It is the greatest aid that non-psychiatrists can possibly offer to the psychiatrist.

This presentation is devoted to a discussion of

*Read before the Neuropsychiatric Society of Virginia, Richmond, June 18, 1941.

Incorporated in a forthcoming book, "In Defense of Mother", published by Dodd, Mead & Company, New York.

psychotherapy in children. What does the term imply? The standard dictionaries speak of "mental treatment" and refer to certain methods, such as hypnotism, waking suggestion and psychoanalysis. But this is obviously not the primary goal with which parents bring for treatment and advice their capriciously eating and otherwise non-conforming, unduly timid or aggressive, terrorized or terrorizing, screaming, whining, stubborn, touchy, fidgety, enuretic, hypochondriacal, thumbsucking, masturbating, stuttering, prevaricating, misappropriating, scholastically embarrassed children. What is really wanted is an understanding of the child and his basic difficulties, a sizing up of contributory parental and pedagogic behavior, a therapeutic plan capable of considering abilities, feasibilities, physical and emotional needs, personal and communal assets and limitations, and a long-range program aiming at the retention of gains and the preclusion of the recurrence of fundamental errors found potent in the individual patient and his educators.

The child, who is brought with a complaint, is and remains by virtue of this fact the central nucleus, though by no means the sole recipient, of therapeutic attention and effort. The direction of the effort is determined in each instance by the factors brought out in the examination. Examination is a dispassionate quest for that which is there. It jerks away from life and life's richness and manifoldness if it suffers itself to be strait-jacketed by any pre-ordained type of curiosity forced into a specifically coded technique. The astronomer who does not allow his telescope to swerve from a fixed position sees precious little of the constellation he wishes to study. A surgeon does not lay out a definite set of instruments regardless of what may come along. A psychiatric investigator must, as any other, be prepared to view, find, analyze and synthesize existing combinations of data. He must learn and teach how to read *from* the facts and refrain from anticipatory reading of his "approach" *into* the facts. It has become fashionable to speak of psychologic and psychiatric approaches to the child. Such an attitude reverses the whole situation. We do not approach children. We are being approached daily by children and their parents with appeals for counsel and action.

When things go wrong, the fundamental difficulty may lie chiefly within the child, without the child, or both within and without. It may arise from in-

born or acquired structural damage, inherent developmental shortcomings, protracted or episodic happenings and experiences, and combinations almost as numerous as the children who are brought to us. These factors must be ascertained and dealt with competently. Disregard or erroneous assessment of bodily involvement would lead therapy perilously away from the focus required under the circumstances. Medically untrained people lack the indispensable ability to determine whether an organ dysfunction is a sign of personal pathology or tissue pathology. They are unable to distinguish between essential, incidental and unrelated physical phenomena. On the other hand, disregard or erroneous assessment of personal dynamics and problems of family relationship would lead therapy just as dangerously away from remedial opportunities not at all attainable by means of prescription pads, dietary regulations, rest cures and other measures centered on the body alone. Isolated somatic consideration has often rightly driven parents from their physicians; absence of such consideration has often played havoc with children's health and happiness. For this reason the Harriet Lane physicians spend two months of their internship year at the Children's Psychiatric Service, where they learn to add interest in, and occupation with, the child to their treatment of his organs as an essential part of their pediatric training.

Child study is, of course, a complex and eminently individualized procedure. Very often the routine medical, psychometric and situational investigation does not suffice. It has been more and more clearly recognized that the child himself should have an opportunity to express and work out these feelings and attitudes which have a bearing on the difficulty presented and cannot be brought out in ordinary conversation. This realization has led to the development of effective auxiliary means that made it possible for children to ventilate implicit misgivings in play situations. This is a decided progress, contributing to research and therapy. But in this arrangement, as in any other, self-criticism is needed. There is too much of a trend to translate children's performances categorically into standardized sets of the examiner's own preferential symbols. These translations, for the most part decreed upon a child, are sometimes referred to with a certain degree of cocksureness as "deep" analysis and "deep" therapy that is supposed to have attained finality of motivation, etiologic omniscience and, given limitless time,

therapeutic omnipotence. Parents are made to believe that "mere" practical, palpable, visible work with that which is there is superficial, that it is necessary to penetrate into the niches and fringes of a so-called unconscious, that "psychotherapy" means a ceremonious hunt for underground "complexes" and "mechanisms" postulated *a priori*. The psychiatric captain, finding a vessel in troubled waters, is told to send its crew home and take the vessel down to the bathosphere for several months or years, with the faith that such "deep" therapy will help the vessel to conquer the seas forever after.

We know from everyday life that the crew cannot be sent home. The child's family is very much in existence and evidence, not as *dramatis personae* in an abstracted plot of incestuous relationships, identifications, repressions, fixations, sublimations and what not, but as real, acting, shaping, influencing and influenced, variously ambitious, protective, solicitous, wondering, hoping, fearing, proud, frustrated, determined, undecided participants. They bring their children with more or less definite attitudes, questions and expectations, attention to which is an important part of the treatment. It is about time to rise in defense of parents, the most abused people of this generation. Mothers have been told by lecturers, magazine writers and by every Tom, Dick and Harry that, no matter what happens, it is all their fault. They have been too strict or too lenient; they have kissed their child too much or not enough; they have not prepared him properly for the arrival of a new baby; they have not selected the proper toys, books or moving pictures; they—alas and alack!—even have given him a piece of c-a-n-d-y between meals. A noted psychologist has sensationally proclaimed the failure of the profession of parenthood. Conflicting sets of rules and precepts, obsessive demands made by various "schools", food standards, weight standards, clothes standards, toy standards, behavior standards, behavior interpretations, behavior forecasts, grandmother's wisdom, radio admonitions, sneers over the bridge table and a confusing vocabulary pelt down and close in on the contemporary mother and tend to sweep genuineness and naturalness out of the house. Add to this the more intimate anxieties, the bugaboos of heredity, repression and inferiority and plain, undisguised superstitions, and you will realize that both in individual case work and general parent education the correction of such notions and resulting tensions must

be made an intrinsic part of psychiatric therapy.

By far the worst thing that has happened to mothers was the introduction of the idea that every act and every omission should be guided by the thought of preventing something or other. Preventive hygiene is indeed one of the greatest advances made in the past half century in matters of health and behavior. You practice prevention by doing things in a way that has been found to produce and maintain a satisfactory condition of well-being. You practice prevention by feeding, training, guiding, living with a child in a manner that has been found to be wholesome, steering tranquilly between the Scylla of uninformed or misinformed carelessness and the Charybdis of overzealous agitation. But parents have been often taught to think of prevention as activity in anticipation of envisioned disaster. They are frightened into prevention. They are warned that if they do or do not do this or that, the child will fall prey to grave dangers lurking in his path. Let him suck his fingers, and his face will be deformed; keep him from sucking his fingers, and you warp his personality. Stay away from your child, or else he will remain tied to your apron strings; be with your child, or else he will be estranged from you. Condition him at an early age, or else his habits will always be disorganized; get away from the fetish of habit training, or else you foist upon him the evil effects of repression. Prevent dental caries! Prevent constipation! Prevent dandruff! Prevent Oedipus fixation! Prevent inferiority feelings! Prevent delinquency! Prevent perfectionism! And if a child shows or does the slightest thing that does not meet the approval of somebody's perfectionism, the parents have failed to prevent it the way the book told them that they should. The mental hygiene movement has started out by throwing presumably preventive inkwells at the devils of insanity and delinquency; it has learned from experience that the spattered ink painted those devils on the wall instead. Not so long ago, presumably preventive "sex education" meant to warn against the assumed horrors believed to result from early masturbation. We know today that the warnings are more ominous than the genital manipulations themselves. We know that they are based on superstitious alarm, which was once believed to be the outgrowth of profound scientific wisdom. We know that many of today's superstitions were yesterday's theories and claims. Is it not possible that some of today's theories may

become the superstitions of tomorrow?

All these considerations are indispensable prerequisites of practical psychotherapy. I have with intention used the terms therapy and psychotherapy interchangeably. For psychotherapy, regardless of dictionary definitions, is not a sectional procedure, a trick, a technique, a circumscribed method, a selected emphasis addressed to an unconscious, a complex or any other personified abstraction. Practical psychotherapy is the organized treatment of a person in trouble, uniquely adapted and readapted to a unique person and a unique situation. It rests on the knowledge of the relevant facts pertaining to the person and situation and aims at the best attainable composure and smoothness of functioning. It does not presume to play God and remake personalities, to emerge from the bathosphere with a vessel invulnerable forever, to expel hypothecated demons with a special kind of exorcism. It does not pre-select the patients but wishes to help all comers. Its ideal goal is the adjustment of all that is maladjusted in an individual child and his specific environment; its working endeavor is the adjustment of all that can be adjusted at a given moment. It steers clear both of Polyanish sweetness and nihilistic bitterness. Given a specific complaint, a specific child and a specific setting, it recognizes its task as one of ameliorating the difficulty complained of, with full regard of the existing aids and obstacles, never impatiently disdaining the next best thing if and when the best thing is not available.

Practical psychotherapy goes farther than limited attention to the complaint or "symptom". It comprises work with the child, work with the family and work with the community on behalf of the child. Correction of major or minor physical disorder may be needed, not because of a direct cause-and-effect connection with the symptom but because a child is better off without the elicited disturbance than with it. A balance may have to be struck between a child's capacities and his own or parental ambitions. Some children, because of age or grasp, may be more accessible than others to therapeutic verbal interchange, with or without the help of more or less methodical play or other arrangements. Some children may need more time than others to be aided in overcoming fears, jealousies, insecurity, aggressiveness, disillusionment or lack of self-reliance.

Along with the treatment of the child's needs, gropings and errors goes that of parental attitudes and perplexities. Our pediatric internes learn that scolding, doctrinal assertions, *ex cathedra* admonitions, such as: "Do not spoil your child!", serve no useful purpose. The parents, whether or not they say so, want help for themselves as much as they want it for their child, certainly at least to the extent to which their emotions and overt behavior are involved in the difficulty complained of. They want to be listened to, they need understanding, reassurance, very often a considerable portion of unscaring, and almost always a rerouting to naturalness and common sense. When there is a sense of humor in the parents or in the child, it is worth cultivating therapeutically, for humor relaxes tensions, diverts from obsessiveness and, paradoxical though this sounds, is the most serious form of seeking and maintaining perspective.

The child and his parents are participants in a social structure. The community presents to the psychiatrist that which laboratories and pharmacies offer to the internist. The patient comes from the social laboratory of life, which at the same time contains many of the remedial ingredients. It often becomes necessary to work with schools, recreational groups and social agencies in order to help a child and his family.

All these efforts together, in accordance with indications and requirements of the individual child and family group, constitute practical psychotherapy, which depends neither on diagnostic swear-words, nor on mystifying terminologies, nor on one-sided techniques, nor on prognostic gloom that projects into the future the envisioning of calamity which is to be prevented. This type of psychotherapy, trying calmly to do the best with what is available, deprives itself, to be sure, of the intriguing magnificence of high-sounding theories anticipating the millennium of ultimate knowledge. Instead, it begins and proceeds with that humility which springs from a respect for realities and with that warmth which flows from a genuine desire to help those who come for help, with a realization of the abilities and shortcomings of the human species and an unperturbed effort to maintain a redeeming sense of proportion.

DR. JOHN MINSON GALT AND THE WILLIAMSBURG ASYLUM.*

P. G. HAMLIN, M.D.,
Williamsburg, Virginia.†

Graven in stone over the Pennsylvania Avenue entrance of the Archives Building in the City of Washington, D. C., are these words: "The past is prologue; study the past."

Some of you perhaps visit Virginia for the first time; many are old acquaintances. No doubt a few have a concept of the Virginian as a pleasant fellow of good manners, genteel breeding, rather well-satisfied with himself, mayhap a trifle provincial. Doubtless not a few of you are acquainted with the story of the Virginian who visited Rome. According to the congenial custom, he called on the Pope. The Holy Father politely inquired "And what part of America do you come from, sir?" "Fauquier County, suh", said the true son of the Old Dominion, without batting an eye.

But today I wish to tell you of a Virginian to whom the adjective provincial could never be applied, of one who had all our virtues, such as they are, and none of our vices, such as they are. I wish to tell you of a Virginia doctor, of a Virginia psychiatrist who looked far beyond the confines of his own hospital, of his own State, to the mentally handicapped, wherever they were to be found. He had an intellectual interest as ubiquitous as the printed page and a humanity as far-flung as the races of the earth.

The storied town of Williamsburg became the capital of Virginia in 1699 while its name was still Middle Plantation. Less than three-quarters of a century after that, the first hospital exclusively for the mentally ill in the western world was opened there. And on the opening day, October 12, 1773, James Galt, Keeper, was on hand to receive the first patients. He was the son of Samuel Galt of Ayrshire, Scotland, of a Covenanter family, which had settled first at Strawberry Banks,¹⁹ near Old Point Comfort, Virginia, and then moved to Williamsburg. From the opening day until May 18, 1862, some member of the Galt family in unbroken line, was connected in an official capacity with the Williamsburg mental hospital.

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†Dr. Hamlin is now serving in the Medical Corps of the Army, with the rank of Major and is stationed at Hoff General Hospital, Santa Barbara, California.

James Galt's younger brother, Dr. John Minson Galt, I, became attending physician to the hospital in 1795. He was educated at William and Mary and studied medicine in Edinburgh and Paris during 1765, '66 and '67. After completing his medical studies he returned to America and for a short while was with the Hudson Bay Company. From Canada he came back to Williamsburg and was a well-known surgeon in the Revolutionary Forces—surgeon to the Fifteenth Virginia Regiment,¹⁶ and later in charge of the military hospital at Williamsburg.² He served the Lunatic Hospital from 1795 until his death in 1808, and was a vestryman of Old Bruton Parish Church.

His son, Dr. Alexander Dickie Galt, served the mental hospital at Williamsburg for over forty years until his death, November 20, 1840. Excellent indeed were both his academic and medical education. From William and Mary he went to Oxford and from Oxford up to London, where, in the wards of Guy's and St. Thomas' Hospitals, he was a pupil of the renowned Sir Astley Cooper. There he studied the medical art during the years 1792, '93 and '94. From London he returned to Williamsburg where he soon acquired an enormous practice in the town and several surrounding counties. He was known throughout the countryside for his prodigious energy, his tireless devotion to his work and his kindness to the poor. It is said that he once refused half of the largest fortune in Virginia to remain all night at the bedside of an old, poor, half-drunken, sick negro.*

One might well be justified in assuming that for Dr. John Minson Galt, II, who was the son of Dr. Alexander Dickie Galt, the genes for medical aptitude were auspiciously arranged in the chromosomes. And so indeed it proved to be.

John Minson Galt, II, was born in Williamsburg, Virginia, March 19, 1819. His mother was Mary Dorothea (Polly) Galt of Richmond, the daughter of Gabriel Galt and a third cousin of his father. At an early age he showed an ardent love of reading, and he excelled as an athlete, a combination

*I am indebted to Miss Mary Meares Galt of New Windsor, Md., and to the late Miss Annie Galt of Williamsburg, Va., for many details of family history.

considered somewhat more rare nowadays. Botany soon became and remained one of his life's chief interests. He read widely and wrote in that field. In the realm of literature, he read all the principal works within his reach, in English, French, Latin and Greek, and when he reached maturity he needed no translator for any European work other than Russian or Turkish. Hebrew, likewise, he mastered, and turning his face toward the East, read the Koran in the original Arabic.²⁰

Like his father and his father's father before him, he frequented the academic hall planned by Sir Christopher Wren. William and Mary's A.B. was his in 1838. Next came Philadelphia and medicine. He walked the wards of Old Blockley, wards which have echoed the tread of Gerhard, the DaCostas, Crawford Long, Agnew, Osler, the Grosses and other true followers of Aesculapius. In 1841 the University of Pennsylvania gave him its M.D. degree and he came home to Williamsburg.

Meanwhile, at the Eastern Lunatic Asylum at Williamsburg, the office of Medical Superintendent had been created by an Act of the Legislature in February, 1841. To this office he was called in July, 1841, at the age of twenty-two, called because his family had served the institution since the day it opened its doors; called because his father and grandfather had been on its medical staff; called because he had already demonstrated unusual promise of medical abilities useful to the citizens of his State. Never was there a more apt instance in which the job sought the man.

Shortly after he took over the hospital housing one hundred and twenty-five patients, his reports began to show his interest, his enthusiasm, his grasp of the work. His mastery of European languages, especially French, gave him ready access to the very best current thought in psychiatric literature. The teachings of Pinel, Esquirol, Leuret, and numerous others were made immediately accessible to the officials of his board and the citizens and officers of his State. Always he was teaching and admonishing for the good of the mentally ill. So deep an impression did his character make on those in public life that a decade or two later, John Tyler, Jr., in writing of him to Jefferson Davis, spoke of him "as one of the purest men of one of the purest families on earth".¹⁸

The student of his writings is impressed alike by their breadth and profundity. His attention was arrested by things that go back to time immemorial,

yet he was thoroughly conversant with the very latest viewpoint given in the mental journals of England, France, Italy, the United States. "The primary effort in Europe made in favor of the insane was due to a French monk, St. Vincent de Paul. Many years afterwards, however, this cause received its first real effort from Pinel and Tuke in 1792."¹⁸ Hippocrates, he demonstrates, classified insanity into mania and melancholia, but it remained for Pinel to point out the fact that "there were cases of insanity in which there were perversions of the feelings without lesions of the understanding. To these he gave the name '*manie sans delire*' and '*folie raisonnée*.'" ¹⁴

He repeatedly emphasizes his belief "that the medical and surgical procedures in a mental hospital should be subordinated to the psychiatric". Kindness, to him, was the keystone of the arch . . . "This, and this alone" he says, "tends fully to dispel the vague ideas often present in the insane that those around them are enemies. . . ." ¹⁴

Many of us, I suppose, are accustomed to think of occupational therapy, recreational therapy, bibliotherapy and musico-therapy as being of rather recent origin. This, however, is far from the truth. G. Alder Blumer,²⁰ in writing of Dr. Galt, shows how he quotes Shelley to show the effect of music in quieting mania. As far as occupational therapy is concerned, he quotes Sir Francis Bacon to testify as to its value "For this distinguished philosopher has quaintly said 'In the theatre of man's life only God and the angels should be lookers on.'"

"In all cases we seize every opportunity to induce occupation of some sort except in the infirm and in those highly excited. . . ." ¹⁵ In 1843 he had for the employment of his patients at Williamsburg a carpenter shop, a shoemaker's shop, a leather goods shop, a broom-making department, and a sewing room.⁴

For recreational games he had cards, drafts, dominoes. These and occupation and music he speaks of as "revulsives of utility in turning away the mind preoccupied by phantasy."

Anent books he writes in 1843,⁴ "A few months back, I purchased two handsome book cases and, in compliance with the Board vesting in me the power, shall shortly procure the requisite number of volumes to form a library, other arrangements will also be made so as to render this a valuable and regular additional agent in the moral treatment."⁴

One can easily visualize his love of and apprecia-

tion for the beauty of the printed page throughout the ages. "Books which have softened the hard lot of the prisoner and added new charms to the life of the free in all its forms . . ." ¹³ He then adds that the books for a mental hospital library should be chiefly, perhaps, travel, biography, history. He quotes the British Commissioners of Lunacy: "No asylum should be without a library."

Schools, regular classes for instruction of the patients, he preached, were an essential part of every well-regulated asylum. In his 1843 report he quotes Dr. Kirkbride's latest report. Dr. Kirkbride reported with interest that instruction in languages had been given to patients at the Pennsylvania Asylum. At Hanwell Asylum near London, patients who were unable to read were taught to do so. At the Bicetre, near Paris, there were schools with between two and three hundred patients as scholars. "In the exertion of the various mental faculties thus attained, there is doubtlessly a moral means of great power." ¹⁴

Eighteen hundred and forty-four was the golden year of American psychiatry. In the month of May, ²⁰ Dr. Amariah Brigham projected his *American Journal of Insanity*, the first number appearing in July. In October of the same year, thirteen medical superintendents of asylums met in Jones' Hotel, Philadelphia, to found the Association of Medical Superintendents of American Institutions for the Insane, which later became the American Medico-Psychological Association, which in turn became the American Psychiatric Association. Next to their enthusiasm and energy, the most extraordinary thing about this group was their youth. The average age of the ten, whose age is given, was 33.1 years. Galt was twenty-two when made a Superintendent, and only three were over forty-five. ²²

Dr. Galt had the most youthful expression of any of the members, with a very full face, medium forehead, large head, and pleasant countenance. He was of medium height, rather stoutly built, with a pleasant manner, easy expression and full flow of words. ²⁰

He moved easily and agreeably among his colleagues at this meeting in Philadelphia, meeting them as intellectual and professional equals on the common ground of their humanitarian labors. He won them all by the sincerity of his nature, the gracious charm of his manner, the brilliance of his mind, the depth of his learning, and the cordiality of his greeting. Openminded, scholarly, alert, he found a welcome place at the council table. He was made

a member of the following committees: On the Construction of Hospitals; On the Organization of Hospitals for the Insane and a Manual for Attendants; On Post Mortem Examinations. ¹ The ties formed in the Association were drawn closer still in the committee room. His writings teem with cordial and affectionate terms for his colleagues. His youth and scholarship saved him from the bizarre manifestations of the Jehovah complex. In his official reports published separately and as a part of the Virginia documents, we read time and time again such phrases as "My excellent friend, Dr. Kirkbride". The "distinguished and able writer, Dr. Ray". "The able and accomplished Dr. Bell of McLean Asylum"; "Dr. Awl, the able physician of the Ohio State Asylum". There were these and many others. Obviously, there was no attempt on his part to pose locally as the source and fountainhead of all psychiatric knowledge. He was much too great a scholar for anything of that sort. He knew that intellect has no geographical limitations and that culture is not a matter of climate.

His literary output began in earnest in 1843 and was continuous afterwards. In that year he brought out a book: "Practical Medicine, Illustrated by Cases of the Most Important Diseases". This is in reality a publication of selected case notes of his father's very extensive practice. One is amazed at the energy and interest of this busy doctor, his father, who took the time to note the symptoms and progress of his cases. One might almost be tempted to observe that it is instinctive with a good doctor to keep notes.

The very year of its founding, 1844, by his friend, Dr. Amariah Brigham, he began to contribute to the *American Journal of Insanity*. In the October number he had an article "Fragments on Insanity". Here he quotes Shelley's poem on the effect of music in the Venetian Madhouse, and gives the reports of thirty cases from the asylum at Williamsburg, with treatment at length.

In 1846 his book on the "Treatment of Insanity" appeared and at the time was the acknowledged authority on treatment in this country and Europe. ¹⁹ He makes no claim to originality in this work, but freely admits it was compiled from notes made when reading for his own benefit. His work in translating the French authors quoted in the book, making their views which were the *fons et origo* of this subject in Europe available to English and American

students, was of the utmost value. The book was most highly valuable in its time and is still full of interest to the student of psychiatric history.

Most erudite indeed are the annual reports that issued from the Williamsburg institution during his incumbency. He envisioned the mental hospital as a place of research into the nature and causes of mental illness and conduct disturbance. Tables of anthropological and physiological data accumulated on the patients and on attendants as controls are included in these reports.⁶ Likewise, the various atmospheric deviations as recorded on the thermometer, barometer and other instruments were carefully recorded⁶. He saw these things clearly in their proper relation, not as the latest, therefore the greatest discovery, but, in his own words "For here as elsewhere, the confirmation of an abstract truth often leads eventually to important practical deductions".

On the keeping of records he insisted, because "In the present age (1850), nothing is more strikingly characteristic than the progress which is made in every department of human effort by the influence of association and inter-communication of ideas. Whatsoever of the new is developed in art or science in any region of the earth, thus soon becomes common property in every civilized community. Hence, there is a general cooperation of an immense body of workers all looking to the same end of advancement. This is very auspicious with regard to the hospitals for the insane."

A modern military writer in speaking of a successful general in the War between the States, said "He was a great general because he saw deeply into the heart of things." This can be paraphrased somewhat to apply most aptly to Dr. Galt. He was a great psychiatrist because he saw deeply into the heart of things. Much more deeply steeped in the lore of the past than the average man, he was as modern as the steam railway and the telegraph, both of which came into being in his lifetime. He recognized the inevitability of change, the desirability of change. There is no indication that he was concerned with the preservation of the *status quo*, and he realized clearly that hostility to new ideas is a defense reaction. He was too close to the revolutionary theories and practice of Pinel, the Tukes, Connolly and others to be content to practice punishment and repression instead of recreation, occupation and other revulsives. He speaks of the conservative in medicine as "one who looks with suspi-

cion or at once rejects a new proposition as in his judgment untenable".¹¹

There is little room for doubt as to his opinion of those who are mentally unable to adjust to the march of medical progress. He quotes with apparent approval the remark of the biographer of Descartes, "The last crime which is forgiven is the announcement of new truths."

His own attitude toward these things is splendidly conceived and beautifully expressed: "The examination of all things by reason and experience and afar from the disturbing forces of prepossession".¹¹

G. Alder Blumer, T. O. Powell, John Curwen, Robert J. Preston and other Presidents of this Association have paid merited tribute to his influence on American psychiatry in their presidential addresses and elsewhere. Dr. Blumer particularly calls attention to his insight as to the evils implicit in political control of State hospitals.

Dr. Galt indeed was aware of the dangers of political appointees in public hospitals. He quotes the preamble and resolution of this Association adopted at its annual meeting in New York in 1848; foreshadowing such dangers. This reads: "Resolved that any attempt in any part of the country to select such officers through political bias be deprecated by the Association as a dangerous departure from that sound rule. . . ."¹²

Again in a gem of delicate satire he lampoons the political gentry: "In the British parliament, I have seen it stated that when an old joke is frequently repeated, it is the custom to put down the nuisance by the cry of 'Joe Miller'. But in Virginia, there seems to be a want of knowledge on this point that wit loses its effect when the same old jest is repeated over and over again *ad nauseum*."¹⁴

And finally, one can almost see the kind mouth curling perhaps just a trifle contemptuously in this portrait of a Virginia politician. "I once heard a rabid politician from the city of Richmond say of an admirable production in relation to political economy written by a learned gentleman in this section of the country 'It should be torn up and its leaves pasted on the walls of your bedlam'".¹⁴

The frenzied breast-beating of the political spellbinder and the stale jokes of the ward heeler disturbed him but little. He was too busy about his service to the mentally ill. Many times he refused to have his salary raised and often fed the patients from his own table.²³ His wants were few and sim-

ple, books his chief, perhaps his only, extravagance. These he had in abundance: Voltaire, Bacon, Shelley, Byron, Dr. Samuel Johnson, Boswell and others in many languages. Among the psychiatrists there were Pinel, Esquirol, Prichard, Connolly, Haslam, Sir William Ellis, Ray, Rush, Cullen, Calmeil. Dunglison's *Practice of Medicine* was there, and Forbes Winslow's "The Anatomy of Suicide", and countless other volumes.

He never married but was quite content in his work, his books, his friends, and in the brotherly companionship of his cousin and assistant at the Asylum, Dr. John Galt Williamson.

The inquisitive student will find that his "Lecture on Idiocy" well repays the reading. It has symmetry of form and wealth of content. He recalls that an Ecclesiastical Council held in Paris in 1212 defended the bishops for having about their persons "fools to make them laugh".¹⁴ It is not difficult to sense his outraged feelings in his description of the French soldiers and the cretins. "It is said indeed that when the French soldiers first met with these wretched objects, they were so cruel that in their horror or disgust, they actually had the brutality to attack the poor creatures with their bayonets."¹⁴

The question of restraint or non-restraint he discusses at considerable length, particularly with reference to the splendid institution at Lincoln, England. "We cannot conclude this sketch without expressing our admiration, not for the system generally (abolition of restraint) to which we have given due credit, not for particular measures adopted at Lincoln, many of which are of great practical importance; not so much for these as for a spirit of progress which lies as it were beyond them at their basis . . . We should not consider a single iota in this respect (the care and management of mental hospitals) a settled matter, but should always be ready to scrutinize every particular with minute attention and should deem all measures, views and arrangements as constantly open to discussion and improvement."¹³

What could be more intelligent, more sane, more reasonable than these words written in 1853. They are not the utterance of an enthusiast fresh from the medical school and hospital; they are the pronouncement of an earnest scholar and careful observer, whose theoretical concepts had even then been distilled through the experience of twelve years as the responsible head of a well-known hospital.

More and more his writings showed the increasing maturity of his concepts in the light of increasing experience and ever wider reading. It is not to be supposed, either, that he neglected the physical side of his craft. He investigated the current chemical therapies.⁹ Chloroform and ether inhalations were tried in mania, with no particularly good results. He essayed two drugs newly recommended for epileptic insanity, one cotyledon umbilicus from England, the other musk root or sumbul from Asia. His conclusions are summed up thus: "Considerable trial was made with these medicines in several cases, but no apparent benefit ensued."⁹

His writings manifest clear insight into the epileptic character. "The paroxysms are usually violent beyond those of any other mental affliction and some of the most dreadful deeds have been committed by persons laboring under this form of cerebral derangement. A patient in this asylum prior to his admission, besides attempting to destroy himself, decapitated an individual with an axe. In two instances of those who have been inmates in this asylum during the last few years and whose violence has been extreme in conjunction with the very peculiar excitement appertaining to this disease, there were evinced generally a very striking display of actions and words referable to religious ideas."⁶

The importance of pathological examinations in mental hospitals he fully appreciated. He describes in detail an autopsy which he performed on an epileptic boy at the request of the family. The whole subject of obtaining permission for autopsies he discusses in his 1850 report and makes a recommendation which the passage of ninety years has not been enough to see adopted, at any rate in his own State. "With regard to pathological investigations as pursued in asylums for the insane, there are several points deserving particular notice. In the first place it is manifest that the interest of science demands such investigations. But the great obstacle on the other hand is that the friends of the patient might object to this course. However, if any such obstacle exists, we think it ought not to be disregarded; on the contrary we are clearly of the opinion that no examination should be made unless the friends give their full consent."

He then analyzes the points of divergence between the process of getting permission in metropolitan hospitals and those serving large and scattered rural communities. The difficulty of communication with

the friends or families of patients in the latter category he points out clearly and suggests the solution as follows: "The only mode perhaps in which the difficulties of this subject could be overcome would consist in making it a matter of legal inquiry, the answer being sent to the asylum along with the other papers accompanying the patient."⁷

To the age-old question of the effect of the moon upon mental aberration, he has an answer: "We find", he says, "the word lunatic to have synonyms in various languages, both ancient and modern, derived from the same idea."

He points out that mental patients are light sleepers, and the rest of us sleep more lightly in bright light than in darkness. The bright light of the moon tends, therefore, to lessen sleep and rest. Then he quotes Burrows to support his theory of the effect of the moon: "Undoubtedly", observes Burrows, "many diseases observe a certain periodicity, and it is not improbable that the paroxysms of violence among lunatics confined in large asylums are actually increased at the period of the full moon; but even if so, this is susceptible to a natural explanation. Maniacs are light sleepers, therefore, like the dog which 'bays the moon' and many other animals, when it is at the full, are distracted by the flitting shadows of clouds which are reflected on the earth and the surrounding objects. Thus the lunatic converts shadows into images of terror and equally with all 'whom reason lights not' is filled with alarm and becomes distressed and noisy. I believe that the moon in no other way affects the insane."⁸

In his annual report of 1853, Dr. Galt advocated making it a provision of the Virginia law—which so far as I can learn has not yet been done—that "whenever a female patient is conducted to the hospital under the mittimus of three magistrates, in all such cases a female guard should be made one of the stipulations of the law. The propriety of this suggestion is sufficiently obvious . . ."⁹

Careful classification he recognized as the basis to proper grouping in hospital, separation of acute from chronic, noisy from disturbed, vicious from amiable.³ A keen appreciation of the values implicit in proper classification and grouping he has shown in his comments on the community of Gheel,^{9, 10} and in his beautiful little essay on the Farm of St. Anne. He speaks with pleasure of the freedom allowed the patients at Gheel and contrasts this with the turmoil of large hospital wards. In the Farm of St. Anne,

he foreshadowed, as Blumer²⁰ points out, the cottage plan type of care.

One cannot read his various contributions to psychiatric literature, particularly his annual reports, without being impressed by his scientific approach to psychiatric problems. Nowhere is this more evident than in his excellent discussion of the medico-legal aspects of mental illness. He was not content to babble obscure legal phraseology or to permit a legal or judicial point of view to muddle his knowledge of human behavior and some of its causes. He knew the absurdity of the legal attempts to apply some right or wrong test or other legal measuring rod to the question of responsibility. The answers of the judges to the questions propounded by the House of Lords in the McNaughten case he had studied, and saw their obvious defects from the standpoint of determining responsibility in crime. This, he discusses, as follows: "The result of these legal hypotheses in the vain search after an imaginary standard has been in the first place executions in which the criminals were insane persons, or secondly, acquittals have taken place where the decisions were in direct opposition to the interpretation given the law. Thus it was in the very case of McNaughten. The prisoner was acquitted, though it was an incontrovertible fact that he understood the nature of right and wrong as to the act for which he was tried. In nature, in reality, there is no test that will establish how far an insane individual is responsible for his acts . . . an end be put to the floundering of our courts and their functionaries after the test or standard or criterion which would at once decide the degree of insanity which would preclude responsibility. The standard does not exist in nature."¹⁵

Examination and repeated observation, preferably in a mental hospital, he feels, is the only rational way to determine the degree of responsibility. "Even then it is admittedly difficult to be certain . . . But even allowing it to be so, how different is such a process from that of legal investigation in the courts of law and how easily might the slight tinge of delusion be overlooked when the general rationality of the individual was so apparent."¹⁵

The Briggs Act of Massachusetts passed by the legislature in 1844 at the instance of Governor Briggs seemed to attract his approval. This Act provided for the examination of criminals believed to be insane by the prison doctor, the Superintendent of the Massachusetts Lunatic Asylum (Worcester)

and the Superintendent of McLean Asylum.²⁴

The case of Bellingham in England aroused his horror. "Hadfield, who fired at the King of England in the year 1800, and the Earl of Oxford also, was placed in Bethlehem Hospital for life. A similar destination in this country was determined for the individual who fired at President Jackson. Of Bellingham who killed Mr. Percival, a former Prime Minister, Lord Brougham remarks: 'He never attempted to escape, but was taken, committed, tried, condemned, executed, and dissected, all within one week from the time he fired the shot.' So great an outrage in justice was never witnessed in modern times; for the application to delay the trial until evidence of his insanity could be brought from Liverpool was refused."²⁵

The situation as regards the Virginia courts, of course, concerned him more directly. He discussed the difficulty of obtaining an acquittal on the grounds of "moral insanity" although all medical men of mental hospital experience readily recognize its occurrence. "It appears that one reason for such opposition and denial is that it is feared that the admission of its being a true form of disease would lead to the plea of insanity more frequently than now occurs. According to our experience, however, with respect to the State of Virginia, the danger of imposition as to this subject is not the probability of the individual being acquitted on the grounds of moral insanity, but the danger of his feigning mania or general insanity. If a criminal attempts to escape punishment by assuming the appearance of insanity, he would be but little likely to adopt the quiet demeanor which is attendant on moral insanity as compared with the violence of one laboring under mania. We have no hesitation in asserting our belief that the number of individuals condemned yearly for crimes, who are really insane, is double or treble that of those who are acquitted on the grounds of insanity, particularly 'moral insanity' . . . Moreover, we believe that for an individual to feign moral insanity is a rare circumstance and that in most instances of feigned insanity, it is the appearance of mania or downright madness that is assumed. The reason is evident; if the jury perceive but little or no evidence of mental alienation in the conversation of a person under trial, they are not apt to believe him insane; from their preconceived notions from those commonly in vogue. They expect to see in a person laboring under this species of disease wild and incoherent talking, vio-

lent gesticulation and perhaps a variety of antics. Criminals know this very well and if insanity is feigned, it is almost sure to be this sort.⁴ In relation to this subject, therefore, that which juries and examining courts have to apprehend in criminal cases is not the plea of moral insanity, but the danger of individuals feigning mania. As things are at present, it is somewhat difficult to acquit persons laboring under moral insanity on this plea for deeds which they have committed through the influence of mental disease, while at the same time persons who would otherwise be condemned for the commission of crimes sometimes escape by feigning general insanity."⁴

The wisdom and penetration in these words is obvious, but in 1853 he writes somewhat dejectedly: ". . . We have no room to pursue this topic further, but we would remark in addition that the whole question of criminal insanity appears in Virginia to be hedged with doubt and difficulty."⁹

This portrait of Dr. Galt as a psychiatrist I have drawn for you largely from his own writings. He was the product of the golden age of American psychiatry, the friend and colleague of Pliny Earle and Kirkbride, both schooled at the Friends Asylum, Frankford, where they learned the gentle Quaker attitude to the insane; others of that group were scholarly Ray, dynamic Bell, energetic Awl, capable Stribling, literary Brigham, active Butler and others. He was the friend of Dorothea Lyne Dix. These are names to conjure with, psychiatrically, and Galt takes his place freely and easily among them. In close association with them, he wrought not only for his patients at Williamsburg, but with his prolific and facile pen, he labored for the mentally ill everywhere.

On May 6, 1862, Federal troops occupied the ancient city of Williamsburg. They put an Army doctor in his place, and a soldier with a fixed bayonet denied him entrance to his own hospital grounds. His anxiety for his patients knew no bounds, and he died on May 18, 1862, possibly of angina.

You are planning to visit the scene of his labors. In twentieth century tempo you will view the somewhat synthetic glories of the eighteenth. Amid the grandeur of the Restoration, pause for a moment in the original churchyard of Bruton Parish. There, close to the door entering the main aisle of the little church, under the shade of a small magnolia, is a burial plot. In it rest three doctors, father, son and

grandson. Pause a brief moment in tribute to the grandson; he was a great scholar, a kind and generous man, a distinguished psychiatrist, the peer of you all.

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CANCER OF THE LARYNX.*

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Laryngology has been called the Cinderella of Medicine and Surgery, left alone to care for herself, often with poor accommodation and equipment in a general hospital. This may explain the lack of interest in the larynx and its diseases on the part of many members of the profession and some laryngologists.

INCIDENCE

Since cancer is not a reportable disease, it is difficult to determine accurately the true incidence of cancer. However, it is estimated that 4 per cent of

all malignant tumors occur in the larynx. Woodward, in 1938, collected statistics showing approximately six thousand deaths are from cancer of the larynx and approximately eighteen thousand people are now suffering with it.

DIAGNOSIS

The diagnosis of cancer of the larynx is based on complete history, physical examination, laryngeal mirror study, and in some incidences with direct laryngoscopy. Before the operation is advised, a biopsy should be done and histological studies made by a competent pathologist. A satisfactory biopsy is not an easy operation. Negative reports are sometimes given in cases of advanced malignancy. This

*Read before the Virginia Society of Otolaryngology and Ophthalmology, at Richmond, May 10, 1941.

This was illustrated with lantern slides and motion pictures.

is due to inadequate specimen or failure to represent whole growth. In cases of subglottic growth, it is difficult to obtain a satisfactory view with direct laryngoscopy, and it is necessary to use a short bronchoscope to obtain a satisfactory view of the growth.

IV is most radio-sensitive, and with Grades II and III the best method of treatment is selected, according to each case.

TECHNIQUE

1. *Anesthesia* is of importance for facilitating any operative procedure and for the safety and well being of the patient. Our anesthesia consists of three grains of nembutal, with HMC No. 2 one hour be-

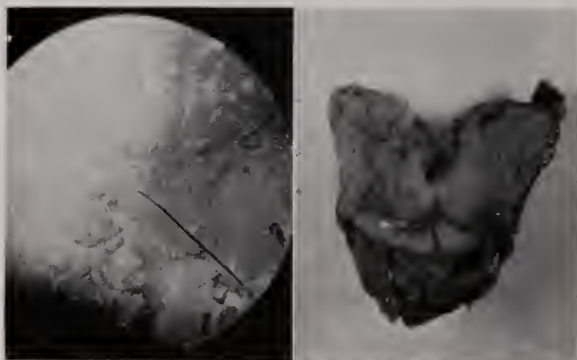


Figure II.
No. 1.—Photomicrograph showing squamous cell carcinoma.
No. 2.—Larynx showing lumen of larynx practically closed by cancers' growth.

fore the operation. Ten minutes before the operation avertin is given as a basal anesthetic. This is supplemented with a small amount of novocain infiltrated over the line of incision. If this is not sufficient to produce complete anesthesia, a small quantity of ether in olive oil is given by rectum as the case may demand. This type of anesthesia eliminates an anesthetist during the operation, and the patient does not undergo any mental or physical shock as is sometimes the case under local anesthesia. While this type of anesthetic is being administered, a physician should be in constant attendance, and, if dyspnea develops, a breathing tube should be inserted. When indicated, we use the Flag breathing tube until the trachea is opened. The feeding tube is introduced into the stomach before the patient leaves the room. This saves time during the operation and also lessens the possibility of contaminating the wound if introduced after the esophagus is opened. After the field of the operation is properly prepared, the larynx is exposed by a straight mid-line incision from the hyoid bone to the second ring of the trachea. The mid-line incision has many advantages over the customary T-shaped incision. Muscles are not cut horizontally and very few large vessels are encountered. This minimizes to some extent the possibility

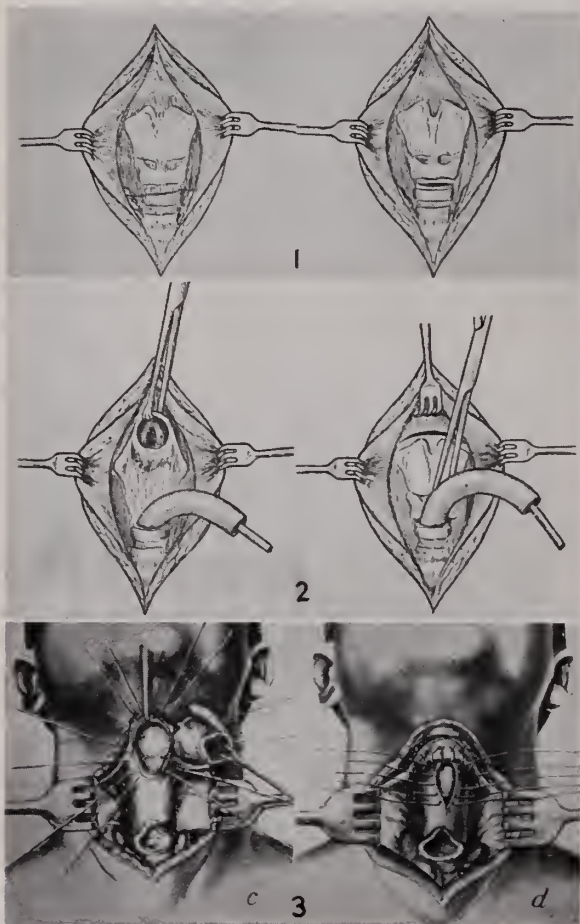


Figure I.
No. 1.—After Jackson Coates.
No. 2.—After Jackson Coates.
No. 3.—After Looper.

It is always well to remember that tuberculosis or syphilis may simulate cancer of the larynx and may occur concomitantly.

Looper, in 1937, stated that the coexistence of these two diseases is extremely rare and in his study of six thousand cases of laryngeal tuberculosis at the Maryland State Sanatorium, he found only one case of cancer of the larynx associated with tuberculosis.

GRADING

The classification of Broders' is generally followed. Grade I is most suitable for surgery. Grade

of post-operative hemorrhage, and the nutrition of the tissue is much better. The better the nutrition, the better and earlier is the union of tissues.

2. The most important development in the single stage operation is the subperichondrial dissection. The larynx is completely skeletonized; all the tissues, including skin, fascia, muscles and perichondrium, are reflected together. By staying close to the larynx and trachea, there is very little traumatism and few vessels are cut; in reality, you do a subperichondrial resection of the larynx.

3. After dividing the trachea, a good broad mucosal flap is taken from the inner surface of the cri-

muscles. When the muscles are sutured by over-lapping them, the possibility of wound infection is lessened.

7. Formerly, many of the best laryngeal surgeons used a number of drainage tubes, but with the improved technique, as mentioned, only one lateral drainage tube is necessary. The tissues are not devitalized, and by leaving them out of the line of incision, primary union is greatly facilitated. The end of the drainage tube extends through the dressings in order that they may be kept open by suction.

8. The tracheal stump is sutured with silk or dermal sutures. The laryngectomy tube is then put



No. 1.—Patient on fourth post-operative day.

Figure III.
No. 2.—Patient on fifteenth post-operative day.

No. 3.—Fourth month after operation, using artificial larynx.

coid cartilage. This gives a healthy bridge of tissue to the danger zone between the trachea and the hypopharynx. The importance of this step in the technique cannot be too strongly emphasized.

4. Adequate closure of the esophagus. This is done with mattress sutures of chromic catgut. We employ the method advocated by Looper, in that the sutures are placed through the outer wall of the esophagus at the upper end in a line where the larynx is to be cut from the esophagus.

5. After complete closure of the esophagus, sulfathiazole powder is freely placed over the entire wound. It is well to remember that the rate of absorption of sulfathiazole is in direct proportion to the extent of the exposed raw surface. Sulfathiazole powder is helpful in the healing of wounds and the prevention of infection.

6. Another advance is the method of suturing the

muscles. If there has been any evidence of shock, the patient should be given glucose solution, intravenously, while in the operating room.

POST-OPERATIVE CARE

This requires careful nursing attention and a physician trained in this specialty should be available at all times. The most important single treatment is to keep the laryngeal tube free of secretions. This is done by the use of neo-synephrine hydrochloride solution and suction machine. Concentrated liquids are given through the feeding tube every four hours until the feeding tube is removed.

COMPLICATIONS

The complications to be considered are:

1. Hemorrhage, which is very unlikely to occur with the present-day technique.

2. Pneumonia can be prevented by keeping the

airways free of secretions, and by getting the patient out of bed as soon as possible. This can usually be done on the second day.

The patient is given the same care and attention as any other surgical procedure, and complications are met and solved as they arise in individual cases.

NICKEL PECTINATE IN TREATMENT OF PEPTIC ULCERS.

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Dr. Walter H. Eddy, in the March issue of the *Medical Record*, makes some instructive comments and observations under the heading, "Nickel Pectinate: A New Therapeutic Agent". He quotes Manville as saying, the ability of pectins to supply the uronic acids which the body needs for detoxifying mechanisms, gives value to apple powders in diarrheas. He relates that P. B. Meyers discovered the metallic pectinates and, quoting Meyers, says: "I have discovered that if nickel be chemically combined with pectin in the proportion of about 0.1 per cent to 1.0 per cent by weight, a pectin body is obtained which easily hydrates and is rapidly dispersible in liquid media, so that it may advantageously be used in the place of ordinary pectin * * * * I have also found that nickel pectinate is remarkably stable even in acid media, as fruit juices, for example, and in this respect differs from other pectinates * * * * it may like pectin, be applied to uses in the form of a liquid concentrate, or as a dry powder * * * * when used in film or powder form it will quickly hydrate, i. e., absorb liquid and disperse itself rapidly through the liquid." "The property of this pectin body discovered and to which I have alluded is its toxicity to bacteria. This property makes it a valuable agent in the treatment of certain bacterial diseases and conditions, in view of the fact that it is a colloidal salt whose molecules are too large to be absorbable through the membranes of the human body, wherefore, it is non-toxic to the human body." Dr. Eddy, with T. T. Mackie, in a study of the effect of peptic ulcer and ulcerative colitis on the blood concentration of vitamin A, found marked reduction in vitamin A absorption in practically all cases examined. In one case, the use of nickel pectinate showed correction of this faulty absorption with considerable speed. In experiments on rats, nickel pectinate was found to definitely increase the effect of a given dose of vitamin B₁ when contrasted with rats on the same dose without pectinate.

In 1939, Kbrein, Fellers and Esselen, Jr., prefaced a report of a study of this effect of pectin on avitaminosis A in rats with the following statement: "It is generally recognized that vitamin A is essential in preventing xerophthalmia and keratinization of the mucous epithelium of the body. This substance is also thought to play an important role in the synthesis of mucin by the body, because a dehydration of the mucous membrane occurs as a result of avitaminosis." These authors found that pectin appeared to be a beneficial supplement to a diet deficient in vitamin A, only in so far as pathological changes were due to lack of vitamin A.

Prickett and Miller attribute the bactericidal action of the nickel pectinate to the nickel ion, since bactericidal action varied with the concentration of the nickel in solution. Some years ago Drinker *et al.* reviewed the question of nickel toxicity, and reached the conclusion that in small amounts it is not toxic.

Dutoit, Zbinden and others reported the finding of nickel in the human pancreas and suggest that, like copper, it may be an essential element, in small amounts, to the human body. Black, Tarnowski and Green compared the effects of pure pectin and nickel pectinate in bacillary dysentery. They reported pure pectin ineffective; nickel pectinate to possess detoxifying bacterial and antihemorrhagic properties, and to be effective in the treatment of bacillary dysentery, based on treatment of ninety-five cases.

Plant pathologists realize that the lack of one pound of boron to an acre of land may cause stunted growth or deficiency disease in plants growing on that soil; so it is most probable that such troubles may be caused in the human body by the lack of such elements in small quantities, as traces of copper, nickel or the combination of these minerals with other material. Is it not possible that peptic or colonic ulcers might be the manifestation of a bodily deficiency, causing local trophic disturbances, or the result of an infection not combated by proper de-

toxifying agents? For a period of two years, in industrial practice, I have had eighteen cases of peptic ulcer, but only four of these were diagnosed with the aid of the X-ray; the other fourteen had the symptoms elicited by physical examination and observation, that were convincing of an ulcer presence. It was my effort, when possible, to keep these patients at work, as it was difficult for them to live without their income from employment. As ten of these cases were men who had heavy exercise for their daily duties, this made it hard to manage. The first case, however, had office duties, but for some years had to keep on a strict diet to keep going. He was a thin, nervous person, of the type that is so often found subject to ulceration of the alimentary tract. This case was benefited by kaopectate, a kaolin and pectin combination. Later nickel pectinate appeared on the market, produced by Lilly under the trade name of ni-pectin, and this latter, taken over a period of about six weeks, at three-hour intervals, apparently produced a cure; for the patient fattened ten pounds and has been able to eat any ordinary diet for eighteen months. This case was not diagnosed by the aid of the X-ray, but was seen by several doctors who all agreed that an ulcer was causing his trouble. My second case, diagnosed at the University of Virginia, was so little fitted for manual work that he was aided by Welfare help and

had to diet for any degree of comfort. Treatment as above has enabled him to do heavy work in handling stone for seven months, though I doubt that he is completely cured, perhaps due to the lack of continued treatment. There are two other cases that I consider cured for over a period of a year, and there are two more of this list that may be cured, though their treatment has been only a few months and too recent to be positive of a cure. All the other thirteen cases have been benefited, though not cured. Some of these probably are old hardened, extensive ulcers, that would probably yield only to an operation.

Doubtless, too, many of the above cases have taken too little treatment, as it is rather expensive, and, when they felt better, it was left off. Of this list all but two were able to go on with heavy work.

I find that hemorrhages are usually checked by this treatment, while pain, discomfort and tenesmus are relieved even on a fairly liberal diet. One case whose ulcer had been irritated by the use of alcohol, so that even a little milk would cause cramps, was immediately relieved of tenesmus upon the first dose taken. I believe this form of pectin a safe and useful aid in treating ulcers of the alimentary tract, and that it offers a big field for further study and research.

CANTHARIDES POISONING.*

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The only virtue, if any, in discussing cantharides poisoning is the rarity of its occurrence and the fact that cantharides has always occupied a hallowed place in the lay mind and practically no place in the mind of the modern physician.

Mr. F.E.D., a thirty-six-year-old, white, married, radiator repairman, called me to his shop about 6:00 P. M., February 20, 1941. When I arrived he was seated on an overturned barrel, leaning against the wall, and obviously ill. He complained of pain all through his abdomen accompanied by vomiting, frequent bowel movements, and more frequent non-productive tenesmus, and urethral burning. His throat felt dry and he had been unable to work that entire

*Read before Richmond Academy of Medicine, April 22, 1941.

day. Examination revealed temperature 98, pulse 72. The skin was cold and clammy. The abdomen was soft, non-tender, and there were no masses or rigidity. The heart and lungs were normal. I was at loss to make a definite diagnosis and told him so, but suggested that due to the prevalent epidemic, grippe should be considered. Accordingly I wrote him a prescription for a phenobarbital belladonna tablet. He immediately dispatched his helper to the drug store. After the helper had gone he sheepishly told me the following story: At about 4:00 P. M. the previous afternoon a friend had persuaded him to take as much Spanish fly as he could measure out on the point of a knife. (Consultation with a druggist estimated this at about one grain.) He felt no

effects of any kind until the next morning at 6:00 A. M., when he was awakened with cramps in the abdomen and evacuated an unusually large stool. From this time on his symptoms as described above developed. He experienced none of the physiological effects promised him. He was then informed that his friend had unwittingly made him ill. He was advised to force fluids, take half teaspoon sodium bicarbonate, and the tablets prescribed every four hours.

The following morning his symptoms had completely disappeared and he worked as usual. A urinalysis forty-eight hours after ingestion of the drug showed a trace of albumin, 15-25 red cells, and 5-10 leucocytes per high power field. He denied previous renal disease and had been in excellent health all his life. Subsequent urinalyses were requested but as he felt well he could see no reason for further bother.

Cantharides is made from the ground bodies and especially the blood of the Spanish fly, *Cantharis* or *Lytta vesicatoria*, found in Spain, Russia, France, Germany, and other parts of Europe. They attach themselves to certain trees and shrubs as white poplar, ash, elder, and lilac upon the leaves of which they feed. Their larvae live in the ground and gnaw the roots of plants. They usually appear in swarms upon the trees in May and June when they are collected. Sunrise, according to the *Dispensatory of the United States*, printed 1836, is the preferred time "when they are torpid from the cold of the night and easily let go their hold." Collectors protected with masks and gloves shake the trees or beat them with poles and gather them in sheets spread on the ground underneath. They are then dipped in diluted vinegar and dried in the sun or on stoves. The ancients exposed them on sieves to boiling vinegar. The bodies are shiny, coppery greenish in hue, with large membranous transparent wings. The powder is grayish, or blackish brown, containing green shiny particles with a strong disagreeable odor, without taste and soluble in alcohol. The U.S.P. dosage is one-half to one grain, or one to five minims of the tincture. A wax, a colloidal solution, and a plaster make up the other preparations of this drug.

The physiological actions are as follows: It stimulates the cardiovascular activity and raises the blood pressure. It causes, in therapeutic dosage, priapism, seminal emissions in the male, and in women, erotic excitement, adventitious menstruation and abortion.

There is great variation in individual sensitivity. Hugh Young in 1921 stated that it was still one of the most valuable aphrodisiacs. The external genitalia may become inflamed, swollen and even gangrenous. Salivation, vomiting, purging and violent tenesmus follow its ingestion. Death preceded by vasomotor collapse has been reported following the ingestion of twenty-four grains or one ounce of the tincture. Postmortem findings reveal denuding of the mucous membrane of the mouth and esophagus, engorgement of the viscera, and inflammatory changes in Bowman's capsule. Cystoscopic examination of a severe but non-fatal case revealed bloody urine spouting from both ureteral orifices and intense engorgement and bulbous edema of the bladder and posterior urethra. Polycythemia may result and persist for days. The non-protein nitrogen rises and renal function test shows delay in dye excretion; acidosis may result. Even when applied to the skin for vesication, bladder urgency, pains in the penis, hematuria, rapid pulse and dyspnea may result.

The history of the drug is intriguing. Hippocrates recommends its use for amenorrhea and dropsy. In 1698 Groenveltdt wrote a treatise entitled "The Use of Cantharides in Internal Medicine." He states that its use in "diverse, difficult, and deplorable distempers as ulcer of the kidneys and bladder, stone, gravel, stranguria, dropsies, and some particular venereal disease was indispensable." He mentions its use in the treatment of gout also. In the North American Clinics prior to 1836, a case of diabetes was reported cured by the tincture of cantharides.

In 1812 Robiquet isolated cantharidin, the anhydride of cantharic acid with a formula of $C_{10}H_{12}O_4$.

In 1891 Beck reported a woman who had taken a teaspoon, about forty-two grains, of powdered Spanish fly in the hopes of causing abortion of a three months pregnancy. She became pale, eyes were sunken, tongue red, heart sounds weak. Abdominal tenderness was marked and there was severe pain over the right kidney. After going into extreme collapse she made a slow recovery.

In 1896 Kempf and Muller reported a patient who had drunk coffee and eaten a biscuit filled with cantharidin by a person who wanted to poison him. He suffered great abdominal and costo-vertebral angle pain. He got along well for a few days then of his accord applied a Spanish fly blister to the back of his neck for relief of a headache. A few

hours later, he developed convulsions and died.

In 1885 Harris reported a prisoner who became maniacal and a cantharides plaster was put on the back of his neck. He tore it off and tried to swallow it. An emetic was administered and vomiting followed. The lips, mouth, and tongue were swollen and inflamed. The next day he died. No post-mortem was done.

In 1913 a French writer reported a patient who took ten centigrams of cantharides powder. Twelve hours later he began to urinate frequently small amounts of bloody urine. He had terrible abdominal pains and died in a few days.

Through the ages cantharides has been used as a cure for tuberculosis, gonorrhoea, alopecia and impotence, and more rationally in the form of a plaster, the so-called fly blister, in pleurisy, arthritis, and other conditions requiring counter irritations.

A local druggist tells me that the plaster is the only form he keeps today and this is little used, and that reputable druggists never sell this or any other form over the counter.

Cantharides obviously has no scientifically founded medical indication. It is hoped that this paper may discourage its use for any purpose.

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McGuire Clinic.

ANEMIA: CLASSIFICATION AND TREATMENT.*

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Anemia is defined by Castle and Minot¹ as a diminution of the normal number or volume of red blood corpuscles or the amount of hemoglobin in a unit of circulating blood. The older classification of anemia as primary or secondary has been largely discarded in favor of the conception of anemia as a sign of some more fundamental disturbance. Even today anemia is sometimes regarded as a diagnosis and treated with liver and iron by physicians who would not be satisfied with instituting treatment based on a diagnosis of edema, fever or leukocytosis. Because anemia sometimes seems easier to treat than to diagnose completely, and because the large number of antianemia remedies on the market is always increasing, in number and in complexity, a short review of some of the points to be kept in mind has been undertaken.

The purpose of this paper is to present a classification of anemia and to review some of the points

to be considered when treating a patient with this condition. The observations used in the discussion of treatment were made on patients treated at the University of Virginia Hospital during the past few years.

To interpret the significance of anemia, one must consider not only the number of circulating corpuscles, but also the organs concerned in their formation and destruction. The earliest recognized erythrocyte precursor in the bone marrow is the megaloblast which, according to the widely quoted theory of Doan, Cunningham and Sabin², develops from an endothelial cell in the closed capillary circuit of the marrow. Megaloblasts are not present in large numbers, a single megaloblast being capable of forming many erythroblasts, which mature through the normoblast and reticulocyte stages to become the adult erythrocytes. As maturation progresses the cell becomes smaller, the nucleus decreases in size and the hemoglobin increases. It is thought that after a period in the circulation variously estimated at from thirty days³ to sixty or ninety days^{4,5}, the erythrocytes are destroyed by fragmentation and engulfment

*Presented before the Northern Neck Medical Society, October 24, 1940; the Albemarle County Medical Society, November 14, 1940; the Fredericksburg Medical Society, January 9, 1941, and the Augusta County Medical Society, February 5, 1941.

in the reticulo-endothelial system. The products of erythrocyte destruction are conserved by the body and utilized in forming new cells.

The critical stages in erythropoiesis are the megaloblastic and the normoblastic. The megaloblastic stage is concerned with cell formation and for this to proceed normally, an adequate amount of the erythrocyte maturation factor must be present. Erythrocyte maturation factor is the term generally used for the active principle in liver extract. Without an adequate amount of this factor a maturation arrest occurs, the megaloblasts increase in number but do not mature normally. Under such circumstances erythrocytes are released from the marrow in subnormal numbers, but the individual cells are generally large and well filled with hemoglobin. A marrow section may show hyperplasia at the megaloblastic stage. The normoblastic stage is concerned mainly with hemoglobin production and for this to occur normally, an adequate supply of iron is necessary. If the iron supply is deficient hemoglobin production falls behind cell production with the result that cells which are deficient in hemoglobin and smaller than normal enter the circulation, perhaps in moderate numbers.

The erythrocyte maturation factor and iron are utilized at different stages in erythrocyte maturation and for this reason a deficiency of erythrocyte maturation factor does not produce the same type of anemia as a deficiency of iron. Because these deficiencies rarely coexist in the same individual, simultaneous treatment with both of these specific substances is seldom indicated.

The normal marrow response to various conditions that produce anemia can be demonstrated by studying reactions in animals and is fully described by Castle and Minot¹. If an animal is bled and the blood discarded, the marrow undergoes hyperplasia. This is reflected in the blood by the prompt increase in platelets, nucleated red cells, reticulocytes and leukocytes. Later the hemoglobin and erythrocytes gradually increase, returning to normal in several weeks. Erythrocyte maturation factor and iron are drawn from body stores for the increased erythropoiesis which takes place. If the bleeding is repeated a number of times, the erythropoietic response gradually diminishes with successive bleedings until the animal no longer recovers from the anemia spontaneously. The blood picture is similar to that found

in human beings with chronic blood loss. The anemia, which is associated with little if any marrow hyperplasia, is characterized by small erythrocytes that are poor in hemoglobin. On administration of iron the marrow becomes hyperplastic, reticulocytosis develops and the animal recovers from the anemia. Further treatment with iron does not cause the hemoglobin or red cell count to rise above normal. The explanation of this sequence of events lies in the fact that blood loss means loss of iron, and when the body reserves of available iron are depleted, hemoglobin formation is deficient. The addition of iron corrects this deficiency. Failure of the hemoglobin and red cell count to rise above normal indicates that iron acts by supplying a deficiency rather than as a marrow stimulant.

If, instead of discarding the blood withdrawn from the animal, the cells are hemolyzed and the hemoglobin returned to the body, one finds that the marrow remains active and the animal may respond to repeated bleeding almost indefinitely. This illustrates that the products of erythrocyte destruction are utilized in erythropoiesis. An analogous situation is found in persons with hemolytic anemia where the erythrocytes are destroyed and the products of cell destruction retained. As the materials necessary for erythrocyte production are present, the marrow is hyperplastic, the reticulocytes are increased and cells nearly normal in size are produced. Erythropoiesis is increased but cell destruction is excessive.

If the animal is treated with benzol or irradiation the marrow becomes less active and a pronounced anemia develops. Examination of the peripheral blood reveals little evidence of marrow hyperplasia. Administration of iron and liver are without effect. In this instance the supply of iron and erythrocyte maturation factor is adequate but the marrow has been so seriously injured that it is unable to utilize them. The circulating cells are usually normal or near normal in size and hemoglobin content, but greatly reduced in number. Aplastic anemia in human beings presents a similar picture.

The studies listed in Table I give useful information regarding the status of marrow activity and erythrocyte destruction, as well as data for accurately determining the size and hemoglobin content of the circulating cells. Use of the hematocrit gives one important information that otherwise would be reserved for those expert at preparing and examining

TABLE I
DIAGNOSIS OF A PATIENT WITH ANEMIA
A DETAILED HISTORY, COMPLETE PHYSICAL EXAMINATION, BLOOD EXAMINATION, AND
FREQUENTLY X-RAY STUDIES ARE NECESSARY

In All Cases:

1. Erythrocyte count
2. Hemoglobin determination
3. Hematocrit (volume packed red cells)
4. Study of the blood smear
5. Leukocyte count

In Special Cases:

1. Reticulocyte count
2. Platelet count
3. Marrow biopsy
4. Bile content of plasma
5. Test for sickle cells
6. Hypotonic saline test
7. Bleeding time
8. Coagulation time
9. Tourniquet test

blood smears. It is particularly valuable in detecting moderate but uniform deviation from normal size in the erythrocytes.

Determination of the size and hemoglobin content of erythrocytes in any anemia may be helpful in arriving at the correct diagnosis and in instituting proper therapy. A modification of Wintrobe's⁶ Classification is presented in Table II. It illustrates that

According to our present concepts, normal erythropoiesis requires a diet containing sufficient amounts of protein, iron, vitamins B and C, and the unidentified extrinsic factor of Castle. An adequate amount of intrinsic factor must be secreted by the stomach and intestine, and the erythrocyte maturation factor, which results from the reaction between the intrinsic and extrinsic factors, must be absorbed

TABLE II
CLASSIFICATION OF ANEMIA
ACCORDING TO VOLUME AND HEMOGLOBIN CONTENT OF ERYTHROCYTES*

TYPE OF ANEMIA	CAUSE	TREATMENT
I. MACROCYTIC M.C.V. over 90 cu M.C.H.C. over 30% Vol. Index over 1.1	1. Deficiency of E.M.F.† 2. Intense activity of marrow (Pernicious anemia, sprue, deficient diet, G.I. abnormalities)	Treatment of Primary Condition Liver Liver Extract Extrinsic Factor
II. NORMOCYTIC M.C.V. 80-90 cu M.C.H.C. over 30% Vol. Index .90-1.1 Col. Index .90-1.1	1. Sudden loss of blood 2. Destruction of blood, acute and chronic 3. Lack of formation of blood (Hemorrhage, hemolytic anemias, aplastic anemia)	Treatment of Cause Transfusion
III. SIMPLE MICROCYTIC M.C.V. less than 80 cu M.C.H.C. over 30% Vol. Index 0.7-0.9	1. "Imperfect" formation of blood (Chronic inflammation and non-inflammatory conditions)	Treatment of Underlying Disease Transfusion
IV. HYPOCHROMIC MICROCYTIC M.C.V. less than 80 cu M.C.H.C. less than 30% Vol. Index 0.5-0.7	Deficiency of Iron due to: 1. Continued loss of blood 2. Excessive demands for iron 3. Defective antenatal storage (Hemorrhoids, fibroids, menorrhagia, growth in childhood)	Correction of Primary Condition Iron in Large Doses

*Modification of Wintrobe's Classification: Internal Clinics, Vol. II, page 45.

†E.M.F.: Erythrocyte Maturation factor, the active principle of liver extract.

the anemias may be grouped into several general types, that several different causes may produce the same type of anemia. It emphasizes some points made in the preceding discussion of erythrocyte production, namely, that liver extract and iron are particularly effective in two fundamentally different types of anemia.

In addition to knowing the degree of anemia and the size of the erythrocytes in the circulating blood, it is desirable to know what factors produce those changes.

from the intestine. This erythrocyte maturation factor, adequate protein, iron, vitamins and possibly products of the endocrine glands (thyroid and pituitary) must be transported to the bone marrow in sufficient quantity. The marrow tissue must be capable of producing normal erythrocytes in normal numbers. These factors being normal, only loss, destruction, or dilution of erythrocytes (such as occurs in pregnancy) can produce anemia. A simple classification of anemia based on these concepts is given in Table III.

TABLE III
CLASSIFICATION OF ANEMIA
I. Defective Blood Production

- 1. Inadequate Diet
(Protein, iron, vitamin B, vitamin C, extrinsic factor)
- 2. Inadequate Gastric Secretion
(Intrinsic factor, hydrochloric acid)
- 3. Inadequate Absorption
(Diarrhea, debility, stricture, fistula)
- 4. Inadequate Storage
(Iron, erythrocyte maturation factor)
- 5. Inadequate Marrow Function
(Chronic disease, tumor, chemicals, irradiation, endocrine, "idiopathic")

II. Blood Loss

- 1. Acute Blood Loss
(Trauma, peptic ulcer, etc.)
- 2. Chronic Blood Loss
(Menorrhagia, hemorrhoids, G.I. tract lesion, pregnancy, etc.)
- 3. Blood Destruction
(Hereditary defect, chemicals, infections, etc.)

The seriousness of anemia depends not so much on its severity as on the nature of the underlying defect. Recognition of the underlying defect and appreciation of its significance is probably the most important aspect of the diagnosis and treatment of

responsible for the anemia and the administration of whole blood in the form of transfusion.

By far the most important aspect of the treatment of anemia is the removal of the cause, and every effort should be made to accomplish this whenever possible. Patients with "primary" anemia and a blood picture resembling pernicious anemia should have a careful study for faulty diet, and roentgenologic studies of the gastrointestinal tract for possible malignancy, fistula or stricture. Patients with "secondary anemia" are not correctly diagnosed unless the cause for the anemia is stated, and are not correctly treated unless effort is made to locate and remove the condition responsible for the anemia. Bleeding hemorrhoids and fibroids should receive more attention than the blood count. If the cause of the anemia is not apparent, careful study of the gastrointestinal tract for benign and malignant lesions, and X-ray examination of the skeleton for primary or metastatic malignancy, should be carried out. Occasionally examination of a marrow specimen will establish a diagnosis of leukemia when examination of the peripheral blood is not conclusive. Repeated physical and fluoroscopic examinations will some-

TABLE IV
POTENCY AND COST OF SOME ANTIANEMIC PREPARATIONS
Liver Preparations

PREPARATION	ROUTE	POTENCY (Unit/cc.)	MAINTENANCE (7u/wk.)	COST/WK
Liver extract -----	Parent	1	7.0 cc.	\$0.60
Liver extract -----	"	2	3.5 cc.	0.45
Liver extract -----	"	15	0.5 cc.	0.56
Liver extract-vit. B -----	"	20	0.3 cc.	0.28- 0.46
Liver extract -----	Oral		10 oz.	2.75
Liver-stomach conc. -----	"		84 cap.	3.00
Liver-stomach-iron-vit. -----	"		84 cap.	3.00
Liver-stomach-iron-vit. -----	"		84 cap.	3.60

Iron Preparations

PREPARATION	DOSAGE (Gr./da.) (Effective or recommended)	IRON CONTENT (mgm.)	IRON UTIL. (%)	COST/awk.
Ferrous Sulphate -----	9-15	180-320	14.0	\$ 0.15
Reduced Iron -----	20-90	1200-5000	0.5- 2.0	0.50-1.50
Ferrous Subcarbonate -----	45-60	300-400	8.0	0.50-0.60
Ferric Ammon. Citrate -----	60-120	800-1600	1.5- 3.0	0.50-1.50
Ferrous Sulphate (F) -----	9-12	180-240	14.0	0.25
Ferrous Sulphate (H.P.) -----	15	320	14.0	0.30
Fe.Am.Cit. (liver, stomach, vit.)--	36	480	?	3.00
Fe.Am.Cit. (liver, stomach, vit.)--	24	320	?	3.60
Fe.Am.Cit. (vitamins) -----	12	160	?	3.00
Iron (copper, wine) -----	1.5 oz.	100	?	2.20

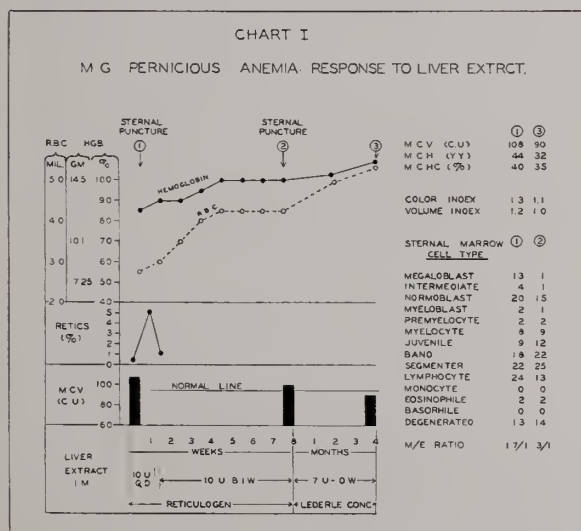
the patient with anemia. Satisfactory management of most patients with anemia requires an understanding of the etiology, pathological physiology and natural history of the disorder present. Measures used in treatment of anemia fall into three classes, namely, removal of the cause, correction of the deficiency

times reveal the presence of one of the "lymphoma group" that responds to irradiation. A careful drug and occupational history sometimes elicits the cause of an anemia, which might prove fatal if allowed to continue.

In treating patients with anemia by the use of

antianemic preparations one must remember that the efficiency of the treatment will depend on the care used in selecting the preparation and the manner in which it is used. One must know not only what form of treatment is indicated but also what constitutes a satisfactory response. The return of red cells and hemoglobin to near normal is not a satisfactory guide, for one may accomplish this and yet have a patient with pernicious anemia develop a serious neurological lesion. Similarly, a hypochromic anemia may improve on iron while a lesion of the gastrointestinal tract progresses.

Transfusion is used mainly in the treatment of "aplastic" anemia that is refractory to iron and liver, whatever the cause, and in anemia due to acute hemorrhage or hemolysis. It is also used in treating patients with chronic debilitating diseases, infectious and metabolic, who have an associated anemia. Occasionally it is necessary to give transfusions to a patient who is acutely ill and severely anemic, before arriving at a complete diagnosis, for the patient's life might be endangered by delay. More often, however, the diagnosis is obscured by unnecessary transfusion, before making a diagnosis other than "anemia".

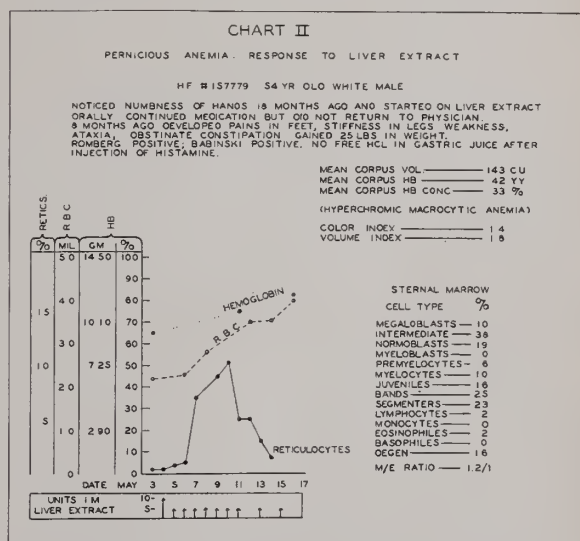


The treatment of a patient with hemolytic anemia depends on the factors responsible for hemolysis. Sometimes discontinuing the offending drug is all that is necessary. In Lederer's anemia transfusion suffices. In familiar hemolytic icterus, splenectomy produces a clinical cure. In sickle cell anemia, diagnosis is simple but all forms of treatment are

unsatisfactory. In some cases of hemolytic anemia the diagnosis remains obscure and treatment ineffective.

Chart I illustrates the changes occurring in the blood of patient with pernicious anemia without neurological manifestations. He was treated previously with liver extract but had received none during the preceding eighteen months. At the time treatment was resumed, a mild macrocytic anemia, achlorhydria and a megaloblastic marrow were present. A deficiency of the erythrocyte maturation factor was present and erythropoiesis was disturbed at the megaloblastic level with the development of a macrocytic anemia. As this deficiency was corrected by treatment with liver extract intramuscularly, the expected reticulocyte response occurred, the marrow became normoblastic, the erythrocytes and hemoglobin increased and the cells became normal in size. The return of the cells to normal size is important, for unless treatment is carried to this point, cord lesions may develop or progress.

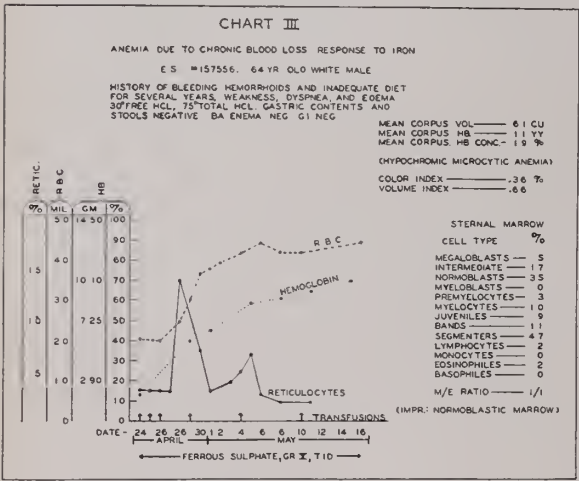
Chart II illustrates the results of inadequate treat-



ment of a patient with pernicious anemia. Despite the fact that the patient had continued taking liver extract orally every day for nine months, there was steady progression of neurological symptoms and signs during this period when he failed to return to his physician. On treatment with liver extract parenterally, both the blood count and the neurological manifestations improved. This patient also illustrates that the severity of cord changes does not parallel the severity of the anemia, those with the

most marked neurological manifestations commonly not having such a severe degree of anemia. The prognosis in such patients depends on the extent of the neurological changes, even more so on the duration. Large doses of liver extract should be continued indefinitely, for the greatest improvement may not occur until several months after beginning treatment and has been known to continue for more than a year.

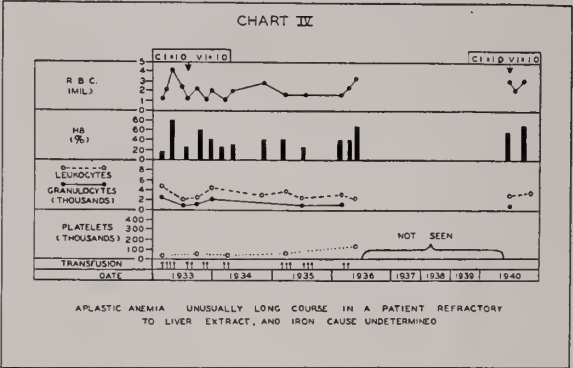
Chart III illustrates the changes occurring in the



blood of a patient with anemia due to chronic blood loss from bleeding hemorrhoids. The marrow was normoblastic, and hemoglobin was reduced to greater degree than the red cell count. The cells were small and poor in hemoglobin. Treatment with iron in the form of ferrous sulphate was followed by a reticulocyte response, increase in erythrocytes and hemoglobin. Hypochromic microcytic anemia as this indicates iron deficiency. It may develop in a growing child with inadequate intake and reserves of iron, for the volume of blood increases in amount as the other organs increase in size. It may arise in women because of excessive menstruation or pregnancy, for the fetus will store iron at the expense of the mother. In an adult male it means chronic blood loss which has exhausted the reserve stores of available iron⁸.

The results of the examinations of the blood in a patient with normocytic anemia due to inadequate marrow function are shown in Chart IV. The anemia in this patient is the aplastic type, refractory to treatment with liver and iron. The hypofunction of the marrow is shown by the proportionate reduction in erythrocytes and hemoglobin giving

a normal color and volume index, associated with low reticulocyte, platelet, leukocyte and granulocyte counts.



Several marrow specimens obtained by trephining showed almost complete aplasia. It is characteristic of this type of anemia to find comparative absence in the peripheral blood of signs indicative of bone marrow activity consistent with the graded physiological response to the existing anemia¹. This case is interesting for its unusually long course, and also for the manner in which erythropoiesis improved to a point where only a moderate anemia existed which permitted the patient to follow a normal life without recourse to transfusion. The cause of the anemia in this patient, as is frequently true in anemia of this type, is obscure.

In Table IV the costs of some antianemia preparations are listed. The figures on iron content and utilization of the first four products are quoted from Heath and Patek⁷. The cost to the patient does not include the amount the physician may charge for the parenteral injection. It is apparent that the simpler the preparation the less it costs. This is particularly significant when one considers that usually only one factor is needed for any particular patient.

Parenteral liver preparations are less expensive than oral preparations, and one is more certain of the amount that has gained entrance to the body. A unit of liver extract is defined as the least amount of material which, when injected daily during a ten-day period, will produce in a patient with pernicious anemia in relapse, a standard reticulocyte response⁶. The amount of material needed in the treatment of pernicious anemia must be determined for each patient individually. Both the number and size of the erythrocytes must be returned to normal and maintained within normal limits. Because of the belief

that some of the active principle is lost in preparing the more concentrated liver extracts, some physicians prefer to use the less concentrated preparation, particularly if neurological damage is evident. In doing this one should be sure he is actually using a cruder preparation rather than one that consists of the concentrated preparation diluted with saline, a procedure which is common practice with the drug firms.

Both liver extract and brewer's yeast are valuable in the treatment of anemia associated with deficient diet. Dietary deficiencies are usually multiple and, if of long duration, the patient may not respond to treatment by the oral route.

Failure of the pernicious anemia patient to improve after a fair trial on liver extract usually means an incorrect diagnosis has been made or some other condition, such as an unrecognized infection, is present.

Ferrous sulphate is the most inexpensive form of iron therapy available, has the greatest iron utilization, requires the smallest dose, and rarely produces gastrointestinal symptoms. Administration of iron by the parenteral route is almost never necessary. If a patient needs iron in treatment, added liver and vitamins are generally not necessary. Such combined preparations sometime do not contain enough of any ingredient in the recommended dosage to produce the desired therapeutic effect in a severe anemia of any type. "The administration of the 'shotgun' remedy provides a load that largely misses its mark"—Castle and Minot¹. A thorough study of the patient to determine what factor is responsible for the anemia is less expensive for the patient than a long course of treatment with some of the antianemic preparations containing liver, iron and vitamins. If one is unable to decide what treatment is indicated, it is preferable to try the effect of one agent at a time, then at least one can judge the effect of each agent. This circumstance occurs more often in patients with a mild degree of anemia than in those with severe anemia.

If the anemia is a result of marrow inhibition secondary to some infectious or degenerative disease

rather than the result of some deficiency, the anemia improves as the primary condition improves, but rarely, if ever, responds to antianemic treatment other than transfusion. Obviously the anemia is but a part of the main disorder, and treatment with agents that act by correcting a deficiency will be ineffective if the deficiency does not exist.

Copper, beyond the amount present as a contaminant in all iron preparations, has not been shown to be necessary in the treatment of any anemia in human beings³.

Correction of foci of blood loss, defective diets, endocrine deficiencies, and infectious processes, when they are factors responsible for the development and persistence of anemia, are more important than anti-anemic drugs. None of the present anti-anemia preparations are marrow stimulants in the true sense, and results frequently will be unsatisfactory unless discrimination and judgment are used in administering them.

SUMMARY

A simple classification of anemia has been presented and the treatment of anemia has been reviewed briefly.

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THE SURGICAL TREATMENT OF STRABISMUS.*

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In 1839, over a century ago, Dieffenbach performed the first tentomy for strabismus and since that time volumes have been written on the correction of squint by operative procedures. The present paper makes no pretense of contributing any new or startling facts to the subject but may serve to focus our attention on some of the problems relative to strabismus which daily confront the ophthalmologist.

In examining a case of squint certain procedures are mandatory before we can determine what can be done to correct the condition. Since the choice of operative procedure is most important we must have as much information available preoperatively as is possible and I feel that the following diagnostic methods will give us such information:

1. Refraction under complete cycloplegia.
2. Visual acuity, fusion and diplopia.
3. Measurement of the amount of deviation.
 - (a) With and without correction of refractive error.
 - (b) With and without cycloplegia.
 - (c) For distance and for near.
 - (d) In the six cardinal directions of gaze.
4. A study of the movements of the eyes by the comitance test.
5. A study of the near point of convergence.

As to the indications for surgical intervention, it seems to me that any patient with a squint which we feel certain cannot be corrected by any other method should have the benefit of surgery. It is obvious that an accommodative squint which can be corrected by glasses should not be operated upon except in very rare cases. However, by measuring the muscles both with and without complete cycloplegia we should be able to determine how much correction we will get with glasses and, if it is found that the squint will not be fully corrected by glasses, an operation should be performed in order to correct the non-accommodative element. The operation in such a case should aim at a slight undercorrection so that when glasses are worn—and they will be necessary in spite of the correction of the squint—the eyes will be straight.

Many ophthalmologists feel that no strabismus should be operated upon until a certain age, whatever that may be, is reached. I must disagree with this. I feel that when we have decided an operation is necessary we should do it regardless of the age of the patient. Of course, it is rare that a patient under three years of age is operated upon for squint because, in these very young children, we cannot make an adequate examination and consequently do not know the exact condition with which we are dealing.

There are, of course, many different methods of testing muscle balance. The Maddox rod, the phorometer, the various orthoptic instruments and, in certain cases, the corneal reflex measured on the arm of the perimeter, are used. However, I do not believe any of these tests are as accurate as the screen and parallax method of Duane. This method, which is known to all of you, breaks up fusion completely and also enables us to measure both lateral and vertical deviations simultaneously. In addition, it is by far the most accurate and easiest method of measuring the deviation in the six cardinal directions of gaze.

I have mentioned diplopia plotting and, while I feel it is important in any case of strabismus in that we get a more complete record of the preoperative condition of the patient, it is particularly valuable in the cases of paretic squint. However, even in these cases the diplopia chart should only serve as a confirmation of the findings on the screen test.

It is particularly important to measure the deviation both for distance and for near, and in the six cardinal directions of gaze. A deviation which is greatest for distance denotes an anomaly of divergence, while one which is greatest at near range is the result of a convergence anomaly.

Duane, White, Dunnington and others have stressed the importance of relieving a vertical deviation if a permanent correction of a lateral imbalance is to be obtained. The existence of such a vertical deviation can best be brought out by measuring the deviation in the six directions of gaze. Of course, we can note a small vertical imbalance in the primary position, but only by measuring this deviation with the eyes looking in the directions of

*Read before the Virginia Society of Otolaryngology and Ophthalmology, at Richmond, May 10, 1941.

gaze can we determine the causative factor in the vertical imbalance. Any vertical imbalance must be considered an individual problem but the following general rules, as stressed by Dunnington, are helpful:

1. Paresis of the superior rectus with fixation by the paretic eye usually calls for a tenotomy or myectomy of the inferior oblique of the opposite eye. When fixation is maintained by the sound eye a resection of the affected muscle gives the best results.

2. In paresis of the inferior rectus a shortening of the affected muscle should be done.

3. Paresis of the superior oblique is generally an indication for a recession of the inferior rectus of the opposite eye. The advancement of the paretic superior oblique as advocated by the late Dr. John M. Wheeler has also produced good results but this procedure is technically more difficult.

4. Paresis of the inferior oblique is best handled by an advancement of the muscle as described by Wheeler. This operation is relatively simple in its performance and the results, I feel, are very good.

Another type of paralytic squint which we encounter frequently is a secondary divergence due to a crippling of the power of convergence. In these cases, where the cosmetic effect is definitely a blemish, it is not enough simply to reattach the internal rectus but a resection of this muscle should also be done and, in some cases, it may be necessary to recess the contralateral external rectus.

The comitance test enables one to corroborate the evidence on primary restriction or secondary overaction in the different directions of gaze. It is performed by placing a card in front of the patient's nose in such a manner that he has to look at the test object in the different directions of gaze, first with one eye and then with the other. The card must be so arranged that the surgeon can see both eyes of the patient at the same time. The test is particularly valuable in cases in which there is both a vertical and lateral deviation in bringing out the affected vertical muscle. The near point of convergence is of great service in helping us select the operation of choice in lateral deviations. If in an esotropia, on convergence there is a marked inshoot of one eye, then a generous recession of the internus should be done but if this inshoot is not present the recession must be more guarded. An exotropia with no power of convergence should have a more generous resection of the internal rectus than one with some con-

vergence power. An exotropia with a normal power of convergence is primarily due to a divergence excess and, in these cases, the principal operation should be a recession of the externus. However, better results can be expected if this recession is combined with a resection of the internus.

Another point on which there is great variance throughout the country is the type of anesthesia used in operating on the extraocular muscles. It is perfectly possible to perform a muscle operation under local anesthesia but it has been my experience that both the patient and surgeon are much happier if a general anesthetic is used. Personally, I have never been able to obtain sufficient anesthesia with an injection of novocaine to eliminate the pain which results from the traction of a muscle on a muscle hook or muscle forceps. Then, too, under general anesthesia we have a more complete relaxation of the muscles and this makes the task easier and, I believe, more accurate. I have made it my practice never to operate on a child under ten years of age without having an x-ray of the chest prior to giving the general anesthesia. In this way we can be pretty certain we are not dealing with an enlarged thymus and, while this is a relatively rare condition, I feel it is decidedly safer to know about this before putting the child to sleep.

The operation of choice in correcting lateral deviations should be left up to the surgeon. There are many different types of shortening and lengthening operations and the operation which works best in the case of the individual operator should be used. Before stating my own preferences I should like to briefly enumerate some of the other methods which are in vogue. Advancement and tucking are both shortening operations, as is the O'Conner cinch. I do not prefer an advancement because the muscle is placed too far forward on the globe to get a good cosmetic result and an equally satisfactory correction can be obtained by a generous resection. I have never done a tendon tucking and my only experience with the O'Conner cinch has been in the cadaver so I am not qualified to discuss these operations. The Wiener modification of the resection or advancement by threading a gold plate with the suture and then passing the suture through the distal edge of conjunctiva and, after the suture has been passed through the muscle and proximal conjunctiva, passing it through a similar gold plate and tying, seems to me to be unnecessary and the removal of the plates

is sometimes quite difficult. Tenotomy of the inferior oblique may be used as mentioned, in a paresis of the superior rectus of the opposite eye but the use of tentomy on either the external or internal rectus should be condemned. The results are too uncertain but usually a large overcorrection results.

My own preference in lateral deviations is resection combined with recession of the antagonist muscle, depending on whether the squint is an exotropia or esotropia as to which muscle has which operation. Probably the most popular resection operation is that devised by Reese. I usually do a modification of the Reese operation and, depending on the amount of resection desired, use either a Dunnington or a Lancaster modification. These differ from the original Reese procedure in that two double armed sutures are used instead of one double and two single armed sutures, and the sutures are placed somewhat differently. The Lancaster modification generally gives a little more resection and is performed as follows: After the conjunctival incision the muscle is delivered on a hook and freed of its subconjunctival attachments. A muscle forceps is then placed on the tendon and the tendon cut free from the globe at the insertion. Two double armed sutures are passed backward through the stump of the muscle and then through the belly of the muscle, from within out, the desired distance behind the cut end, and tied. The excess muscle is then cut off and the conjunctiva closed with interrupted sutures. The Dunnington modification proceeds in the same fashion except that the sutures are first passed through the belly of the muscle and then forward through the stump and proximal edge of conjunctiva and finally backward through the distal conjunctiva and tied. In this modification the conjunctiva is closed with the same sutures which are used for the muscle.

The recession which I prefer is a slight modification of the traditional Jameson operation. The conjunctiva is incised vertically over the tendon of the muscle, Tenon's capsule below the muscle opened and the muscle delivered on a hook. The muscle is

freed of its subconjunctival attachments and a single armed suture is threaded through the upper half of the tendon. A similar suture is passed through the lower half of the tendon. The muscle is cut free from the globe at the insertion and the sclera is marked gently with a sharp pointed caliper so that one knows the exact distance of the recession. The sutures are then passed through the outer layers of sclera at the mark of the caliper in such a fashion that the muscle is spread out. The sutures are tied and the conjunctiva is closed with interrupted sutures.

Two words of warning should be interjected. The first is that the conjunctival incision should be thoroughly closed in order to do away with the granulomata which are so frequently encountered after an improper closure, and the second is that an internal rectus should not be recessed more than 5 mm. in an esotropia. If this rule is not observed an embarrassing convergence insufficiency may result. The sutures I prefer for all muscle work and also for the conjunctival closure is 0000 10 day chromic catgut with atraumatic needles. This does away with the necessity of removing silk sutures and I have never felt that the reaction was in any way excessive.

I bandage only the operated eye and the eye is kept covered for a week, the dressing being changed every forty-eight hours. When the dressing is removed, if glasses are worn, they should be used.

SUMMARY

The successful surgical treatment of strabismus depends on a careful preoperative analysis and the selection of the proper type of operation. The measurement of the deviation in the six cardinal directions of gaze and the estimation of the near point of convergence are most important. Operate when indicated. Minor variations in surgical technique are inconsequential. Tight closure of the conjunctiva prevents postoperative infection and granulomata. It is necessary to bandage only the operated eye.

THE INCIDENCE OF SYPHILIS IN INDUSTRIAL PRACTICE.*

RUFUS BRITTAİN, M.D.,
and
JOHN S. PEARSON, M.D.,
Jewell Ridge, Virginia.

The late ballyhoo which has been made regarding case finding by mass blood testing with especial interest in the man of the Selective Service draft age has stimulated us to the study of the incidence of syphilis in our practice.

The latest large series of cases to be reported is from Chicago, where 700,000 individuals were blood tested and an incidence of 3.2 per cent found in the white race, and an incidence of 18.9 per cent in the colored race. This study was of the general population. Stokes quotes Mayo Clinic records in which they found an incidence of 6.1 per cent in the laboring class of people. Our practice is composed almost entirely of this class of people engaged in coal mining at Jewell Ridge Coal Corporation's No. 1 Mine located at Jewell Ridge, Va., and No. 2 Mine at Jewell Valley, Va. We therefore undertook this study to determine the incidence of syphilis in our practice.

All regular mining companies require a physical examination of each man prior to employment. This examination is one of the duties of the "company" doctor. As a part of our physical examination, we make a routine blood Wassermann test and, when this is found positive for syphilis, treatment is instituted. The wife of each positive reactor is called in for testing and, if positive, she also is treated. A further source of routine Wassermann testing is the group of obstetrical patients, who, if positive, are started on anti-luetic treatment, which is continued uninterrupted throughout pregnancy.

This study embraces a period of four years, from 1937 to 1940, inclusive. During that time a total of 4,483 persons were tested for syphilis by the blood Wassermann reaction. Of these 3,968 were male and 515 were female, 4,333 were white and 150 were colored. Table I shows the distribution by sex and race over this four-year period.

An analysis of these figures gives a white male incidence of 4.3 per cent, a colored male incidence of 26.2 per cent, a white female incidence of 6 per cent, and a colored female incidence of 40 per cent.

The gross incidence is 5.24 per cent. The apparent higher incidence in females is probably not a true incidence as, as before stated, we check the wives of all male positive reactors and not routinely on all women. The small number of colored people is explained by the fact that only during the last six months covered by this study were there any of this race employed here.

TABLE I

	WM (--)	WM (+)	CM (--)	CM (+)	WF (--)	WF (+)	CF (--)	CF (+)
1937	865	43	0	0	105	7	0	0
1938	497	39	0	0	154	10	0	0
1939	884	26	0	0	120	10	0	0
1940	1,413	56	107	38	100	4	3	2
	3,659	164	107	38	479	31	3	2

The transient nature of this type of laborer makes an evaluation of the results of treatment practically impossible as we seldom keep an individual here long enough to complete the course of treatment.

An outline of the treatment plan which we employ may not be amiss in this paper. Upon receiving notice of a positive Wassermann we call the individual to the office and try to ascertain the duration of his infection. If upon physical examination we find no evidence of heart or central nervous system involvement, we start treatment as follows:

Potassium iodide by mouth and mercury ointment by inunction continuously.

Neoarsphenamine—0.3 gm. 1st day.

Neoarsphenamine—0.45 gm. 4th day.

Neoarsphenamine—0.6 gm. for 10 doses at weekly intervals.

Bismuth—1.5 cc. with the 11th dose of Neoarsphenamine.

Bismuth—1.0 cc. weekly for 11 more doses.

Then begin with 0.6 gm. of Neoarsphenamine for 12 more doses at weekly intervals. Then 12 shots of bismuth. A series or course consists of 12 shots of Neoarsphenamine, 12 shots of bismuth. After 3 such complete series we check the blood Wassermann again; if negative, another series is given and then the patient is allowed to rest for a while with check Wassermann's every month for 6 months, then yearly for two years. If, during that time, the Wassermann reverts positive again we institute treatment again.

*Read at a regular meeting of the Tazewell County Medical Society in Tazewell, Va., May 8, 1941.

For the past two years anti-luetic drugs have been furnished by the Virginia State Department of Public Health. A feature of luetic control in this state is the State Roster of all syphilitics. As discovered, each syphilitic is given a number and a card is sent to his doctor upon which the record of treatment is kept. If the patient leaves his doctor's care, the doctor notifies the State Department of the patient's departure, the amount of treatment he has had and, if possible, the patient's destination. Often the patient's destination is not known and not easily ascertainable.

All the states furnish antisyphilitic drugs upon the request of a physician; some states, however, require a morbidity report on the case to receive such drugs.

Laws exist in every state requiring all treatment sources to report all cases of venereal disease to either the local or state health officer. When patients lapse from treatment in clinics under the direction of the state or local health departments, efforts are made by Social Service workers or public health

nurses to locate the patients and have them return to treatment. Where patients under the care of private physicians lapse from treatment, the health department, in a number of states, will make follow-up services available to the physician if such service is requested.

If the destination of a patient who desires to change his residence is made known to the local or state health officer, this information is forwarded to the health officer having jurisdiction in that community. A list of clinics treating venereal diseases is published each year by the U. S. Public Health Service, and copies are made available to state and local health officers and clinic directors. The cooperative patient who desires to continue treatment upon change of residence may thus be directed to a treatment source in the new community.

Some states in which migratory workers are a problem, such as California, furnish such persons a form which indicates the diagnosis and amount of treatment received. This form is kept by the patient and presented at the next treatment source.

RADICAL RESECTION OF THE PANCREAS FOR CANCER.

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Norfolk, Virginia.

The following case is reported as a further contribution to the recent literature on radical removal of cancer of the head of the pancreas.

Anatomy: (Fig. 1) The front of the pancreas is crossed transversely by the origin of the transverse mesocolon; and this structure contains the middle colic artery, which runs at first to the right across the front of the pancreas, and then turns directly forward to supply the transverse colon. This artery must be recognized at once and strictly protected during the deep dissection of the operation.

The portal vein lies close to the common duct at the foramen of Winslow, but traced distally it diverges toward the midline, so that there is an inverted V-shaped interval between the two. Its more vertical tributary, the superior mesenteric vein, lies at first near the midline, bearing upward and to the right in front of the uncinata process, and then behind the body of the pancreas, where it is later joined

by the splenic and the inferior mesenteric veins, together or separately, to form the portal vein.

The superior mesenteric artery lies to the left of the superior mesenteric vein, and runs with it in front of the uncinata process and then behind the body of the pancreas, where it originates from the aorta. The middle colic artery, emphasized above, crosses in front of the superior mesenteric vein before it enters the mesocolon.

Lying behind the duodenum and the pancreas, and the lower end of the common duct, and separated from them only by fascia, lie the vena cava and the renal veins.

The position of the hepatic artery is familiar to the general surgeon.

All of these vessels must be recognized and protected to avoid disaster.

CASE REPORT

Harry M., colored male, aged forty-six, No. 61871, St. Vincent's Hospital, Norfolk, was admitted July 12, 1940, complaining of jaundice and abdominal

*From the Surgical Service of St. Vincent's Hospital. Presented before the Annual Spring Clinic, Norfolk County Medical Society, April, 1941.

pain. Observation indicated probable common-duct stone, and operation was done August 2, 1940. There was found common-duct obstruction by a hard round smooth tumor in the head of the pancreas, the size of a small crab-apple; there were no

He gained weight and strength for some weeks, with good appetite and digestion, but in January was not feeling well, and obvious metastases were present in the abdominal wall. He died suddenly in March, 1941. Jaundice did not recur, nor any symptoms

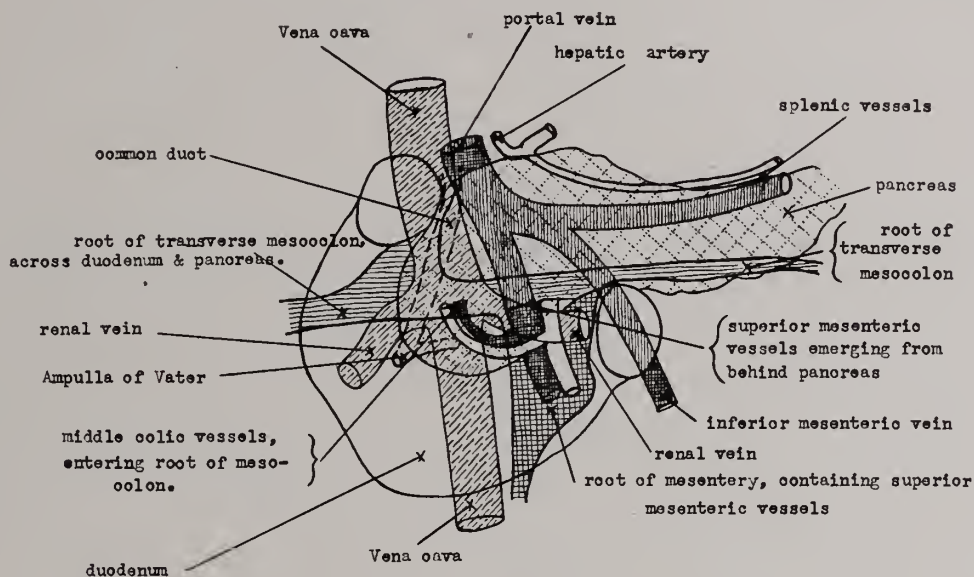


Fig. 1.

surrounding adhesions, and it appeared that the Whipple or Brunschwig operation of block dissection and removal could be done with some hope of radical cure.

Cholecysto-gastrostomy was done as a first stage, and the incision closed. The patient did very well, and soon went home, recovering some weight and much of his strength during the next month.

The second stage of the operation was done September 5, 1940. The transverse mesocolon was adherent at one point, but the middle colic artery could be avoided; and the head of the pancreas, the duodenum and the common duct were removed *en bloc*, grossly wide of the tumor.

It proved easy, after removing the whole duodenum, to bring up the end of the jejunum and anastomose it to the pyloric end of the stomach, and this was done as a simpler procedure than the usual closure of both ends and posterior anastomosis.

The wound was reopened nine days later for sudden pain and vomiting which suggested possible leakage of the anastomosis, but nothing was found, and the patient thereafter did well. He was discharged September 21, 1940, sixteen days after the second operation.

suggesting cholangitis. Autopsy was not obtainable.

N. B. The rapid spread of the cancer was at once predictable when it was found that operation had not gone wide enough of the tumor mass, and that cancerous tissue was present at the line of section of the pancreas. This technical error might have been avoided by immediate frozen section, provided the cancer had not invaded the whole body of the organ.

DISCUSSION

The operation (Fig. 2) consists of a block removal of the duodenum and half the pancreas, the

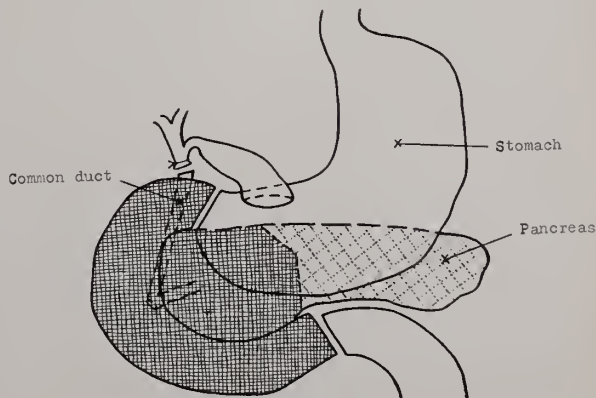


Fig. 2.—Shaded area indicates block removal of duodenum and half of pancreas.

common duct and the pancreatic duct being included. The pancreatic duct is closed by suture, and none of the pancreatic juices thereafter enter the intestine; but as Whipple points out, the pancreatic duct has been blocked off by the growth for some time anyhow, so that the gland is already functionless as regards its external secretion. The internal secretion is not disturbed by the operation.

Bile flow into the intestinal tract is established by a first-stage anastomosis of the gall-bladder to the stomach or the jejunum, and at this first stage Whipple also advises a gastro-enterostomy and section of the common duct, leaving a long silk ligature for easier identification at the second stage. In the case reported above, I had not seen his description for some months, and could not remember just what was recommended; and therefore only performed cholecysto-gastrostomy. Finding the common duct at the second stage presented no difficulty in this case, however, as it turned up prominently when the duodenum was stripped up from the right toward the midline.

This operation is in unfamiliar ground, and the

necessary dissection is found to be deep and difficult. There may be some adherence near the large vessels; it may be hard for some time to say whether the operation can be safely completed; so that neither duodenum nor pancreas should be finally cut across until the situation is clear.

Retrograde infection of the bile tract appears to be a hazard of convalescence, though I think it did not occur in this case; digestion is not interfered with, and strength is regained as following any severe operation.

SUMMARY

Another case of radical resection of cancer of the pancreas is recorded, the patient dying after some months, of metastasis. The operation, while difficult and dangerous, is entirely feasible in patients in good general condition, and of good natural stamina. At least in cancers of the ampulla it should result in occasional cures. Cancers of the pancreatic substance would give a poorer prognosis, for they metastasize early; but there is no doubt that the operation should be tried if possible.

712 Botetourt Street.

AIDS IN THE DIAGNOSIS OF MENTAL RETARDATION.

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Often when records of special schools and institutions for the mentally deficient are carefully studied it becomes evident that many cases of feeble-mindedness are not recognized until sometime after the actual incidence of the retardation. Many cases which obviously exhibited retardation from birth go unrecognized until it is noted during the second or third year that the child does not speak normally.

This problem of late diagnosis of mental defect becomes more pertinent especially if there appears in the history an illness which proximates encephalitis. In such cases one is always hard pressed to decide whether retardation was present at birth or came as a result of the illness. This is especially true if Parkinsonism is not evident. Many sophisticated parents having heard of encephalitis, will deliberately fabricate such an illness into the history in an effort to cast all blame from heredity or parental factors. Such incidences make it difficult for con-

tinued research into the role of heredity or family incidence of feeble-mindedness.

The physician, more particularly the pediatrician, has an important role to play in the diagnosis of mental retardation. It is he who usually has an opportunity first to diagnose the condition. If his diagnosis is made early, then many of the problems for prognosis and for treatment are lessened. Moreover, the physician is often the one to whom the patient is first brought with the ever-present parental plea: "Why?" and "Now what?"

Because early diagnosis is so important—all experts in the field agree that most favorable results are obtained if treatment and training are begun during the pre-school years—the following aids to the physician are offered. These should be of particular value to the physician in the rural community where the services of a competent psychologist may not be available. The list, a condensation of items

from various mental and developmental scales, shows those items of behavior which should be completed by the dates indicated if the child is developing normally.

ONE MONTH

Lifts head from shoulder
Attends to sound
Stares at large objects

TWO MONTHS

Carries object to mouth
Assists on being lifted
Follows source of light

FOUR MONTHS

Sits with support for 30 seconds
Holds head steady when carried
Locates a sudden sound within foot of head
Vocal responses
Reacts to mirror image.

SIX MONTHS

Sits unsupported for 30 seconds
Reaches for an object if prompted
Turns head towards sharp sound
Drinks from cup
Plays with toes
Uses several syllables
Recognizes familiar people

NINE MONTHS

Creeps or begins to walk
Raises self by chair
Says "Da-da" or equivalent

ONE YEAR

Stands without support
Puts penny in bank
Unwraps paper from block
Seeks attention—will repeat a performance laughed at

ONE YEAR SIX MONTHS

Scribbles
Can turn pages of a book
Uses spoon in eating
Drinks from glass
Obeys simple commands
Points to requested objects in pictures

TWO YEARS

Identifies parts of body (mouth, hair, hand, ear)
Builds tower of four blocks in imitation
Unwraps paper from candy
Folds paper in imitation
Begins to use words in combination

TWO YEARS SIX MONTHS

Cuts paper with scissors
Repeats two digits
Draws horizontal and vertical lines in imitation
Tells experiences

THREE YEARS

Copies a circle

Can give family name

Can give sex

Repeats two or three digits

Names familiar objects

THREE YEARS SIX MONTHS

Distinguishes longer of two matches

Can tell what to do if thirsty, cold, hungry, etc.

FOUR YEARS

Counts four pennies

Repeats four digits

Copies a square

Repeats sentence of ten words

FIVE YEARS

Counts ten objects correctly

Gives correct number fingers, separate hands

Makes rectangle from two triangles

Names primary colors (red, green, yellow and blue)

Can tie knot

It is not recommended that the above items be made the sole basis of judgment in a particular case. It is suggested, however, that if the physician notices that at any given level of development the child is unable to perform those items which would normally be expected of him, then careful consideration of intelligence should be made. This may be done by reference to the above list and noting at what level the child fails to perform a majority of the required items. If this level is much below the true chronological age of the child, then retardation may be suspected, although normals may vary from the norms. By careful questioning of the parent with the items furnished above, the physician can also obtain a rough estimate of when the retardation began, or better still, if it had been present from birth but unrecognized by the parents.

Such a relatively simple procedure can relieve the psychiatrist of much of the burden of deciding the true nature of the retardation. By checking children in light of the above items, earlier diagnosis is also more probable. Here is a simple pediatrician's task which can relieve a problem shot through with complexities.

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GONADOTROPIN EXCRETION DURING THE MENSTRUAL CYCLE.

F. R. WOODWARD,

and

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The reports in the literature concerning renal excretion of pituitary gonadotropin during the menstrual cycle are somewhat at variance. Some investigators^{1, 2} report a single peak of excretion near the midpoint between menses, while others^{3, 4} find an irregular excretion of longer duration. A patient with congenital absence of the uterus and vagina* showed no gonadotropin excretion. Differences in technic will probably not explain these discrepancies, which indicate the pressing need for more data. For this reason the following case was studied: This was a married woman (as opposed to single women in some other reports,^{1, 2}) twenty-five years of age, who was suffering from a mild thyroid deficiency, and had been taking 0.2 gm. of dried thyroid daily fairly regularly for four years. She continued this throughout the experiment. Her menstrual periods were normally regular and lasted three or four days. Her only pregnancy had been a spontaneous two months' abortion, ten months previously.

The entire first morning specimen (after seven or eight hours' sleep) was concentrated with alcohol to 9 cc, following the technic advocated by Frank,⁵ except that the dried precipitate was dialyzed in cellophane tubing two to three hours in the cold, to remove the toxic salts.⁶ The concentrate of an entire morning specimen was injected into one twenty-one-day-old female rat. The method of injection was

that of Heller *et al.*,⁷ giving 1 cc. per dose. The ovaries and emptied uteri were weighed the day after the last injection. The results are given in Fig. 1. Two of the menstrual periods shown were unusually short and scanty. Where the uterus weighed more than 60 mg., the rat's vagina was open and the smear positive or nearly so.

Although there is no correlation between intercourse the night previous, and the hormone excretion, it was of interest that the three highest peaks followed intercourse. Because of this, the patient was again studied six months later. This time the entire twenty-four-hour specimen of urine was collected. Half of it was concentrated as before, and injected into a single rat. Figure 2 shows a similar

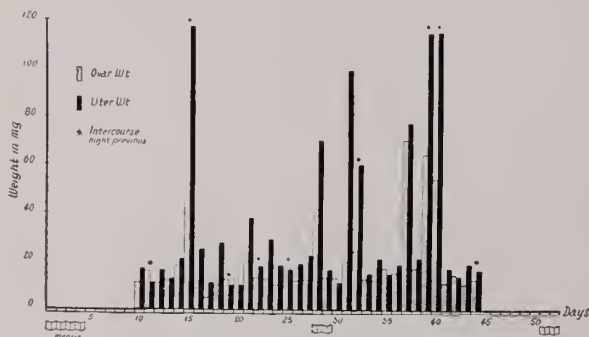


Fig. 1.—Urinary gonadotropin excretion, as estimated by effects of injection of entire concentrated first morning specimen on ovarian and uterine weights of immature rats.

*Spalding, H. C. *et al.*: *Virginia Medical Monthly*, 68: 105, 1941.

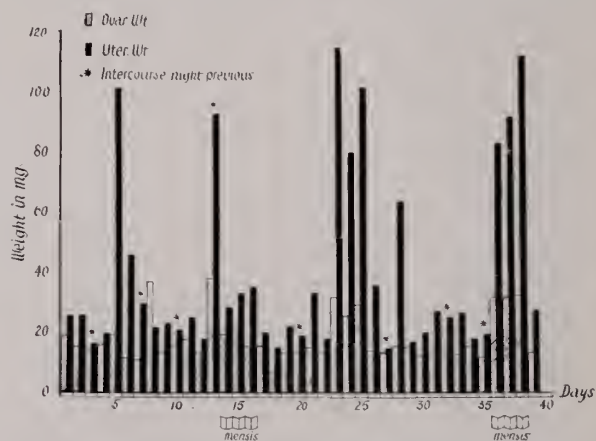


Fig. 2.—Urinary gonadotropin excretion, as estimated by effects of concentrated half of the 24 hour specimen.

type of gonadotropin excretion, but no correlation with coitus.

The irregular and marked excretion of gonadotropin in this patient who is not endocrinologically normal, is in marked contrast to the single peak obtained by practically the identical technic in two normal women.^{1, 2} One may wonder if this patient is entering into a premature menopause. Again, we believe that the comparable results of the two figures indicate that for some purposes, the use of the first morning specimen only, instead of an aliquot portion of the twenty-four-hour specimen is satisfactory.^{1, 2}

SUMMARY

The urinary gonadotropin excretion of a female receiving thyroid therapy was marked and irregular, as compared to normals. No relation between intercourse and gonadotropin excretion was present.

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SOME RESPONSIBILITIES OF THE MEDICAL PROFESSION.*

GEORGE G. HANKINS, M.D.,
Newport News, Virginia.

As your president, I have deemed it my duty and responsibility to bring to your attention some of the important questions of the day that could materially affect the progress of medicine, and the importance of an active medical Society, geared to smooth functioning, in order to render service where that service is needed and to combat undesirable infringements that a rapidly changing world is apt to thrust upon our profession. I feel that I should impress upon you these facts rather than enter into a lengthy discourse on the practice of medicine, which will be adequately covered by a most interesting program arranged by your committee.

As we assemble today for our twenty-second annual meeting, we, no doubt, each and every one of us, due to worldwide changes, feel the pressure of greater responsibilities, for such is our lot. It matters not whether it is the individual who is ill and needs our care and attention or whether it is a troubled war-torn weary world that is calling for assistance—the responsibility falls upon the medical profession. Therefore, as your president, I deem it timely, fitting and altogether proper, that I enumerate some of these responsibilities and remind you of the more essentials that we, because of intense absorption in our daily duties, might neglect.

Of paramount importance to our country at this time is The National Defense Program. Industry requires eleven men to maintain one soldier in the field. We, as medical men, not only have the responsibility of supplying the military forces of our country with adequate medical care but we must see that disease and pestilence hinder not the progress

of industry. The defense of our country requires, and will no doubt receive, from the medical profession that steadfast, unselfish cooperation that the profession has always given in the past.

In order to render this service to our country and our fellow-man we must not be unmindful of the importance of our Society, for in unity lies strength. Our very nature that endows us with the aptitudes to carry on the work of our profession identifies us as individualists, and unless we are cognizant of this potential weakness, we are apt to deprive our efforts of that dynamic force that is best furnished through the medium of a well-organized Society.

The object of our Society should be the protection of our vulnerable position, and the advancement of the teaching of medicine by providing a medium through which we can each impart to the other the knowledge we have gathered by our studies, observations and deductions. In this connection, I would be negligent of my duty did I not take this opportunity to impress upon you the importance of adult education. In order that we may familiarize ourselves with the progress of our specialty, your Society sponsors each year, at the University of Virginia, a most instructive postgraduate course, where we can have the privilege of grasping and applying new ideas expounded by some of the most eminent men in our profession. For this most gratifying opportunity the Society has in the past been indebted to its postgraduate committee headed by Dr. Fletcher D. Woodward, who now bears the burden alone, and who deserves much credit for his untiring efforts in providing this most instructive course. I cannot emphasize too strongly the importance of this great opportunity and urge that you take advantage of it.

*Address of President—delivered before the Virginia Society of Otolaryngology and Ophthalmology, Richmond, May 10, 1941.

Last, but by no means least, let me warn you that *we* must tax our ingenuity in order that we may preserve the traditional rights of our profession and guard it against the ever-grasping phalanges of the "would-be reformers" and politicians who, for personal gain, would subterfuge our profession and ultimately destroy individual initiative, thought and progress. We must make clean our house and avoid adverse criticism. We must continue to show progress and leadership rather than be regimented in the ranks of those who follow and take orders. At no time in the past does history reveal that American medicine has faced a greater crisis than it faces today. We are no longer classed among the learned professions but are being tried at the bar of justice. Unless we can overcome this lethargy of self-satisfied inertia and fight back we will be wearing the manacles tomorrow that are being forged for us today. The medical profession has probably done more to further the advancement of civilization and bring happiness to mankind than any other group. To maintain this enviable leadership and push onward to greater accomplishments we must maintain our professional freedom. This freedom can only be maintained through our collective strength, which necessitates an ever greater individual support to our Society. We must remain strong—strong professionally, socially, economically and morally. We must exhibit group strength and force the enemy to consider our citadel before attempting invasion of those precepts held sacred by our profession. A smooth-functioning, well-organized Medical Society is the answer.

I trust that you may have gathered from this brief address that I am making an effort to stimulate increased membership and interest in our State Society, and I appeal to you to be on the alert to combat the introduction and passage of any and all laws catering to the whims and fancies of would-be philanthropists, which in turn would inhibit the proper administering of mercy to the unfortunates and make unpleasant our lives as practitioners.

I will not usurp more of your time as we have a most interesting program to which to look forward.

In closing, let me welcome each and every one of you, and on behalf of the Society, I wish to express to the Richmond members our appreciation for their hospitality.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for July, 1941, compared with the same month in 1940 and for the period of January through July, 1941, compared with the same period in 1940 follows:

	JULY 1941	JULY 1940	JAN.- JULY 1941	JAN.- JULY 1940
Typhoid and Paratyphoid	26	30	97	95
Diarrhea and Dysentery	969	179	1,638	626
Measles	914	172	33,465	3,296
Scarlet Fever	26	42	908	1,053
Diphtheria	13	19	226	307
Poliomyelitis	10	8	22	16
Meningitis	2	7	68	53
Undulant Fever	0	2	7	11
Rocky Mountain Spotted Fever	6	10	15	19
Tularemia	0	0	18	23

TULAREMIA

Tularemia, since first being made a reportable disease in 1928 in Virginia, has been recognized as occupying an important rank among those infections which are primarily diseases of animals but which are also communicable from them to man.

The human disease in this state has, in by far the majority of cases reported, been contracted through the handling and dressing of wild rabbits, though a few cases undoubtedly transmitted through the bites of ticks have been recorded.

Naturally because of its source and means of transmission a decided seasonal prevalence, during November, December, January, and February, corresponding with the principal months of the hunting season, has been the experience in this as well as in other sections of the United States. In Virginia, in addition to the seasonal variation in the number of cases, tularemia likewise has shown cyclical variation from year to year with a high incidence having been generally recorded every third year. The number of cases occurring each year has shown at least a degree of correlation with the estimated number of rabbits killed each hunting season, though sufficiently reliable data is not available to establish the cause and effect relationship of this observation. If previous experience can be relied upon, however, an increase in the number of cases and deaths from tularemia may be expected during the coming season.

Medical Society of Virginia

Annual Meeting



CAVALIER HOTEL

The Cavalier Hotel at Virginia Beach will be the scene of the Medical Society of Virginia Convention on October 6th, 7th and 8th.

The Cavalier needs little introduction as it is one of the largest and best known hotels on the Eastern Seaboard. Situated high on a beautiful terraced lawn, overlooking the Atlantic Ocean, it offers ample facilities for all types of recreation to help make the convention more enjoyable. The hotel has a beautiful indoor swimming pool with salt water, and the ocean is within a stone's throw for those who will also care for an ocean dip, horseback riding for those who would enjoy a canter along the beach or on the beautiful trails behind the Cavalier, a beautiful eighteen hole golf course, tennis courts, and a lovely ballroom for dancing.

The Cavalier is located in the heart of the defense area at Virginia Beach, so for those who like to keep abreast of the times, there can be side trips, during visiting hours, of course, to Camp Pendleton, Fort Story, and the defense areas of Norfolk and Portsmouth.

Although the various beach clubs close the first of September, there will be many places of amusement remaining open all year round at the beach. Besides the other golf courses at the beach, there are several large bowling alleys, and for those who enjoy a movie instead of more strenuous relaxation, there are theaters.

There is a rather full program for the doctors, and there will be plans to entertain their wives while the meeting is in session. The Norfolk and Princess Anne Medical Societies are looking forward to entertaining the doctors and their wives at what they feel is one of the finest playgrounds in the nation.

There are many other hotels, cottages and tourists homes at Virginia Beach for those who desire to stay elsewhere than at the Cavalier Hotel. A list of the various places may be found in the Journal.

PROGRAM

(PRELIMINARY)

MEDICAL SOCIETY OF VIRGINIA

October 6, 7 and 8, 1941

Virginia Beach, Virginia

Headquarters—CAVALIER HOTEL

BUSINESS SESSIONS

Monday, October 6

11:00 A. M.

COUNCIL—Ballroom

2:30 P. M.

HOUSE OF DELEGATES—Ballroom

Tuesday, October 7

HOUSE OF DELEGATES—Time and place to be announced.

SCIENTIFIC PROGRAM

Tuesday, October 7

GENERAL SESSION

9:30 A. M.

Ballroom—Cavalier Hotel

Call to Order—GEORGE A. DUNCAN, M.D., General
Chairman, Committee on Arrangements

Invocation

Announcements

Introduction of President

Address by President—Organized Medicine and
Public Welfare—WALTER B. MARTIN, M.D.,
Norfolk

Memorial Hour—J. BOLLING JONES, M.D., Chair-
man, Membership Committee

Papers

The Airplane, A Possible Means of Transmission
of Disease—W. P. JACKSON, Comdr. (MC) U.
S.N.R., Norfolk.

Airplanes introduced serious problems regarding transmit-
ting infectious diseases. Passengers, during incubation period,
and dangerous insects may be transported thousands of
miles.

Discussion:

Hugh H. Trout, M.D., Roanoke

Clinical Consideration of Blood Plasma—Charles S.
White, M.D., Washington, D. C.

Abstract of work done at Gallinger Municipal Hospital for
a period of two years, during which time over five hundred
intravenous injections of plasma were given. Indications
for the use of plasma are discussed.

Discussion:

Charles M. Caravati, M.D., Richmond

Carcinoma of the Cervix: Time Lost Before Treat-
ment (*Lantern Slides*)—Randolph H. Hoge,
M.D., Richmond

Analysis of delay from onset of symptoms to institution
of treatment, based on actual study of cases. Seriousness of
delay and recommendations.

Discussion:

Wright Clarkson, M.D., Petersburg

Unusual Manifestations of Acute Infectious Mono-
nucleosis—BYRD STUART LEAVELL, M. D., Uni-
versity, JOHN OSBORNE MCNEEL, M.D., Uni-
versity

Study of a series of fifty patients is presented. The varied
clinical picture of infectious mononucleosis is discussed, and
ten unusual cases which presented diagnostic difficulties are
reported.

Discussion:

J. Hamilton Scherer, M.D., Richmond

11:20 A. M.

Clinical Pathological Conference—Louis Ham-
man, M. D. (*Guest*), Baltimore.

Visit Scientific and Technical Exhibits

2:30 P. M.

GENERAL SESSION

Ballroom

Some of the Problems of the Medical Department
in the Present Emergency—Colonel Norman T.
Kirk, M. C., Washington, D. C.

MEDICAL SECTION

Ballroom

Selective Service as It Applied to the City of Nor-
folk—C. LYDON HARRELL, M.D., Norfolk

Five Local Boards was set up in the City of Norfolk
one physician to each Board. We physicians got together
and organized a clinic staff and agreed to work together.
The information gained in regards to physical defects should
be of inestimable value.

Discussion:

N. G. Wilson, M.D., Norfolk.

Sickle Cell Anemia—JAMES P. BAKER, M.D., Rich-
mond

The frequency of the disease, its varied symptomatology,

clinical and laboratory aids in its diagnosis and methods of treatment will be discussed.

Discussion:

William B. Porter, M.D., Richmond

The Use of Heat in General Practice—BEN L. BOYNTON, M.D., Norfolk

Underlying principles governing the most effective use of heat in general practice are discussed. The relative effectiveness of the more common methods in use is considered and the indications and contraindications for each modality are given.

Discussion:

John E. Gardner, M.D., Roanoke

Management of Chronic Suppurative Pulmonary Disease—PORTER P. VINSON, M.D., Richmond

Classification, differentiation, and bronchoscopy for location and distribution of infection, drainage, or aspiration and insulization of powdered sulfanilamide, if indicated.

Discussion:

I. A. Bigger, M.D., Richmond

SURGICAL SECTION

Hunt Room

Cancer of the Stomach (*Lantern Slides*)—GUY W. HORSLEY, M.D., Richmond

Discussion of the problem of cancer of the stomach, including the value of X-ray treatment, with case reports illustrated by lantern slides.

Discussion:

Edwin P. Lehman, M.D., University

The Role of Internal Pneumolysis in the Treatment of Pulmonary Tuberculosis (*Lantern Slides*)—DONALD S. DANIEL, M.D., Richmond

Satisfactory artificial pneumothorax is impossible in pulmonary tuberculosis where pleural adhesions prevent adequate collapse. Closed section of pleural adhesions is discussed with reference to the indications, advantages, and method employed. Personal report of a series of cases with illustrations.

Discussion:

Dean B. Cole, M.D., Richmond

Carcinoma of the Thyroid—ARTHUR M. SMITH, M.D., Charlottesville

Review of the recent literature on the subject and a summary of such cases treated at the University of Virginia Hospital in the past sixteen years.

Discussion:

George Zur Williams, M.D., Richmond

A Method for Eradicating Congenital Sinuses by Electro-Coagulation and Steam; with Special Reference to Pilo-Nidal Sinuses—PHILIP JACOBSON, M.D., Petersburg

A coagulating unit placed in the sinus, but remote from the closed ends, produces steam which penetrates and distends the sinus tracts, thereby defining and destroying the lining epithelium with its pressure and heat.

Discussion:

Visit Scientific and Commercial Exhibits

6:00 to 7:00 P. M.

Cocktail Party—Hunt Room

All members and guests invited

Wednesday, October 8

9:00 A. M.

**MEDICAL SECTION
Ballroom**

Vaginal Smears as an Aid to Therapy in Gynecology (*Lantern Slides*)—EUGENE LOWENBERG, M.D., Norfolk

Vaginal smears are an index of the state of the vaginal mucosa and thus of the ovarian hormone activity. They are of value in indicating hypo-ovarianism, incipient menopause, time of ovulation, in detecting imbalance of the two ovarian hormones, estrogen and progesterone.

In therapy the smears serve as a guide of adequacy of treatment when estrogens are used.

Discussion:

Waverly R. Payne, M.D., Newport News

Management of Foreign Bodies in the Air and Food Passages, with an Analysis of 223 Cases (*Lantern Slides*)—

E. G. GILL, M.D., Roanoke

JAMES H. GRESSETTE, M.D., Roanoke

The purpose of this paper is to bring to the general practitioner the importance of foreign body consideration in every case of obscure chest condition. The number of foreign bodies that have been overlooked in considering the various chest conditions will be reviewed. Every patient with a cough that cannot be explained by the usual examination should have the benefit of a bronchoscopic examination.

Discussion:

G. S. Fitz-Hugh, M.D., Charlottesville

The Surgical Management of Epilepsy (*Lantern Slides*)—J. M. MEREDITH, M.D., Richmond

The chief causes of surgical epilepsy are: (a) Congenital, (b) Neoplastic, (c) Inflammatory, (d) Traumatic, (e) Vascular, (f) Degenerative brain lesions. Examples of these six groups with post-operative results, are presented.

Electro-encephalography is briefly discussed, especially with regard to localization of intracranial lesions in patients with epilepsy.

Discussion:

C. C. Coleman, M.D., Richmond

Present Day Concepts of Cancer of the Cervix—

JULIAN L. RAWLS, M.D., Norfolk

An attempt is made to give a composite picture of the standardized treatment of the disease with five year salvages.

Discussion:

C. J. Andrews, M.D., Norfolk

Uterine Motility in Dysmenorrhea (*Lantern Slides*)—WILLIAM BICKERS, M.D., Richmond

Kymographic study of uterine contractions at various phases of the normal menstrual cycle and in the cycle of patients with dysmenorrhea. These tracings and the effect of various drugs upon the contractions of dysmenorrhea will be shown.

Discussion:

Edwin M. Rucker, M.D., Richmond

SURGICAL SECTION

Hunt Room

Recent Advances in the Diagnosis and Treatment of Cutaneous Fungus Infections (*Lantern Slides*)—

RICHARD W. FOWLKES, M.D., Richmond

ALLEN PEPPE, M.D., Richmond

New diagnostic aids (Wood's light and the interpretation of trichophytin reactions). Clinical picture due to infection

with *Trichophyton purpureum*. Practical therapeutic procedures.

Discussion:

James W. Anderson, M.D., Norfolk

Mediastinal Emphysema (*Lantern Slide*)—M. MORRIS PINCKNEY, M.D., Richmond

Symptoms simulating acute cardiac or abdominal diseases but due to mediastinal emphysema are emphasized. Hamman's observations link pulmonary interstitial emphysema and mediastinal emphysema, the validity of this sequence being strengthened by Macklin's experiments upon animals. The pathological physiology of mediastinal emphysema is described. The most important sign detectable by physical examination is the peculiar loud "crunching, churning" sound, synchronous with the heart beat, heard in the precordial area.

Discussion:

Staige D. Blackford, M.D., University

Pneumothorax in Ambulatory Patients—

DEAN B. COLE, M.D., Richmond

WALTER L. NALLS, M.D., Richmond

This paper is an analysis of experience during the past seventeen years in treating private ambulatory patients with pneumothorax. During this time, pneumothorax was attempted in 234 patients and found possible in 198 patients. Follow-up of these patients is reported.

Discussion:

E. C. Harper, M.D., Richmond

Frank B. Stafford, M.D., Sanatorium

Hepatic Enlargement—CHARLES M. CARAVATI, M.D., Richmond

An original etiological classification of hepatic enlargement is presented. Brief discussion of pathology and significant findings of hepatic dysfunction associated with hepatomegaly and their enlargement are considered.

Discussion:

Walter B. Martin, M.D., Norfolk

The Roentgenological Diagnosis of Gastro-Intestinal Hemorrhages (*Lantern Slides*)—

ALLEN BARKER, M.D., Roanoke

CHARLES H. PETERSON, M.D., Roanoke

CHARLES D. SMITH, M.D., Roanoke

The Roentgen findings of the more common and some of the unusual bleeding gastro-intestinal lesions are described, together with a brief history of the cases presented.

Discussion:

Vincent W. Archer, M.D., University

12:15 P. M.

GENERAL SESSION

Ballroom

Office Gynecology—James R. Miller, M. D. (*Guest*), Hartford, Conn.

A discussion of diagnostic and therapeutic procedures used by the specialists which are also available to the general practitioner.

Visit Scientific and Commercial Exhibits

2:30 P. M.

GENERAL SESSION

Ballroom

Medical and Surgical Management of Ulcerative Colitis—Henry W. Cave, M. D. (*Guest*), New York City.

3:15 P. M.

PANEL DISCUSSIONS

General Practice of Medicine—Ballroom

James P. Baker, M.D., *Chairman*

A. Brownley Hodges, M.D.

Eugene M. Landis, M.D.

F. H. Smith, M.D.

H. B. Mulholland, M.D.

Surgery in Relation to General Practice—Hunt Room

Robert L. Payne, M.D., *Chairman*

Henry W. Cave, M.D.

Hugh H. Trout, M.D.

Edwin P. Lehman, M.D.

Linwood D. Keyser, M.D.

Obstetrics and Gynecology—Dining Room Porch

C. J. Andrews, M.D., *Chairman*

James R. Miller, M.D.

Bayard Carter, M.D.

A. M. Groseclose, M.D.

Waverly R. Payne, M.D.

Pediatrics—Private Suite

Edwin A. Harper, M.D., *Chairman*

F. D. Wilson, M.D.

Lee Sutton, M.D.

J. M. Bishop, M.D.

Basil B. Jones, M.D.

Members are requested to submit questions on subjects in which they are interested to the Chairman of these Panels or to the Secretary of the Society.

7:00 P. M.

Banquet, Floor Show and Dancing.

(Free to those registered at the Cavalier).

Scientific Exhibits

"Kodochrome Photography in Dermatology", James W. Anderson, M. D., and Raymond Kimbrough, M. D., Norfolk.

"Arsenic In Tobacco", E. E. Barksdale, M. D., Danville.

"Oxygen Tent and Cabinet", F. Clyde Bedsaul, M. D., Floyd.

"Exhibit from the U. S. Marine Hospital", W. A. Bean, M. D., U. S. Marine Hospital, Norfolk.

"Uterine Motility", William Bickers, M. D., and Rolland J. Main, Ph. D., Richmond.

"Hutchinson's Teeth", A. D. Brashear, D. D. S., Medical College of Virginia, Richmond.

"Rheumatic Fever and Heart Disease", Paul D. Camp, M. D., and Louise F. Galvin, M. D., Richmond.

"Certain Problems in Intestinal Surgery", Hymn Cantor, M. D., Petersburg.

"Intravenous Drip Treatment for Syphilis", Walter

- Clarke, M. D., American Social Hygiene Association, New York, New York.
- "Plastic Surgery of the Face and Neck", E. G. Gill, M. D., Gill Memorial Eye, Ear and Throat Hospital, Roanoke.
- "Factors Influencing Peripheral Skin Temperature", Harvey Haag, M. D., and J. H. Weatherby, Ph. D., Department of Pharmacology, Medical College of Virginia, Richmond.
- "Pediatric Surgery", Guy W. Horsley, M. D., St. Elizabeth's Hospital, Richmond.
- "Diabetes in Children", William R. Jordan, M. D., Richmond.
- "Foods that Disagree and Are Disliked During the First Year", W. Ambrose McGee, M. D., Richmond.
- "Industrial Health", Committee on Industrial Health, Medical Society of Virginia, Richmond.
- "Diagnosis of Gastro-Intestinal Hemorrhages", Charles H. Peterson, M. D., W. Allen Barker, M. D., and Charles D. Smith, M. D., Roanoke.
- "Activities of the Virginia State Department of Health", I. C. Riggan, M. D., and J. C. Funk, Sc. D., Richmond.
- "Blood Pictures in Disease", J. H. Scherer, M. D., Director of Laboratories, Medical College of Virginia, Richmond.
- "Fever Treatment of Syphilis", J. Asa Shield, M. D., Tucker Hospital, Richmond.
- "The Pathogenic Fungi", Frederick W. Shaw, M. D., and J. Douglas Reed, M. D., Medical College of Virginia, Richmond.
- "U. S. P. and N. F. Committee", Virginia Pharmaceutical Association, Richmond.
- "Plasma in Shock", Charles S. White, M. D., and J. Lloyd Collins, M. D., Washington.
- "Relief of Pain by Nerve Crushing", Eugene L. Lowenberg, M. D., Norfolk General Hospital, Norfolk.

Hobby Exhibits

- "Reconditioned Old Boats", O. T. Amory, M. D., Newport News.
- "The Life of Robert E. Lee" (In Verse), W. O. Bailey, M. D., Leesburg.
- "Colored Photography", John W. Devine, M. D., and John W. Devine, Jr., M. D., Lynchburg.
- "Boat Models and Minor Magic", R. V. Funsten, M. D., University.
- "Wood Carving", M. Grove-Hagen, M. D., Richmond.

Commercial Exhibitors

Booth No.

- 1 Powers and Anderson, Richmond.
- 2 Valentine Company, Inc., Richmond.
- 3 Eli Lilly and Company, Indianapolis, Ind.
- 4 A. S. Aloe Company, St. Louis, Mo.
- 5 Petrolagar Laboratories, Inc., Chicago, Ill.
- 6 John Wyeth and Brother, Philadelphia, Pa.
- 7 Mead Johnson and Company, Evansville, Ind.
- 8 Liebel-Flarsheim Company, Cincinnati, Ohio.
- 9 Peoples Drug Stores, Washington, D. C.
- 10 C. B. Fleet Company, Inc., Lynchburg.

- 11 Lederle Laboratories, New York, N. Y.
- 12 Smith, Kline and French Laboratories, Philadelphia, Pa.
- 13 Ciba Pharmaceutical Products, Inc., Summit, N. J.
- 14 General Electric X-Ray Corporation, Richmond.
- 15 Philip Morris and Company, Ltd., Inc., New York, N. Y.
- 16 The Gilliland Laboratories, Inc., Marietta, Pa.
- 17 Holland-Rantos Company, Inc., New York, N. Y.
- 18 Van Pelt and Brown, Inc., Richmond.
- 19 E. R. Squibb and Sons, New York, N. Y.
- 20 The Borden Company, New York, N. Y.
- 21 Kloman Instrument Company, Washington, D. C.
- 22 Schering Corporation, Bloomfield, N. J.
- 23 Coca-Cola, Atlanta, Ga.
- 24 The C. V. Mosby Company, St. Louis, Mo.
- 25 Doak Company, Inc., Cleveland, Ohio.

SPECIAL MEETINGS

Monday, October 6

8:00 P. M.—Hunt Room

Open to Profession

Moving Picture on "Pneumothorax", sponsored by Tuberculosis Committee, Medical Society of Virginia

Tuesday, October 7

1:15 P. M.

Luncheon Meeting—Virginia Obstetrical & Gynecological Society

5:15 P. M.—Ballroom

Doctors interested in diseases of the CHEST are invited to meet for the purpose of organizing into a special group.

6:45 P. M.

Dinner Meeting—Virginia Radiological Society

This will be followed at 8:00 P. M. by a Round Table Discussion on "Miller-Abbott Intubation Treatment for Intestinal Obstruction", with Dr. W. Osler Abbott of Philadelphia as Chairman and Dr. George W. Chamberlin, of Reading, as Co-Chairman.

Round Table Open to Profession

7:00 P. M.

Dinner, Virginia Urological Society

Dinner, Alumni, Medical College of Virginia

Dinner, Virginia Section, American College of Physicians

8:00 P. M.

Virginia Orthopedic Society

Wednesday, October 8

1:15 P. M.

Luncheon Meeting—Virginia Pediatric Society

Reports for 1941 Annual Session

Medical Society of Virginia

The Council

The Council has held three meetings since the last annual meeting of the Society—October 8, 1940, at the close of which Dr. Walter B. Martin assumed his duties as President, January 21, 1941, and April 7, 1941. Minutes of these meetings appear in the MONTHLY as follows: pages 699-702, November, 1940; pages 166-168, March, 1941; and pages 292-293, May, 1941.

Reports to be considered by the House of Delegates at its first meeting on October 6, 1941, follow.

Executive Secretary-Treasurer

Though a large amount of detail work is constantly being done at headquarters office, committees of the Society do their part so well that this report is of necessity brief.

On August 1, 1941, we had an enrollment of 1,896, as compared with 1,855 last year. There are a large number of our members now enrolled in the Government Services and many have expressed appreciation of the action of the Council in exempting them from payment of dues for 1941. The changes in membership include 117 new members, 4 reinstatements, 19 resignations, 49 deaths, and 12 dropped for non-payment of dues, or a net gain of 41.

The number of component societies is the same as last year—forty-eight, representing ninety-one counties and one city. During the year, the Fourth District and Southside Virginia Medical Societies, which covered practically the same territory, petitioned the Council for a new charter under the name of the Fourth District and Southside Virginia Medical Society and this was granted. All counties of the Fourth Congressional District are included in this organization, but doctors in Buckingham and Cumberland are listed as associate members as they have representation in the House of Delegates through the James River Medical Society.

The State Society was represented at the meeting of the American Medical Association by Dr. Walter B. Martin, delegate, and Dr. Julian L. Rawls, alternate for Dr. Alex. F. Robertson, Jr.

After many years of service to the medical profession of the State, Dr. J. A. White, chairman of the Membership Committee, died in February. The President appointed Dr. J. Bolling Jones of Petersburg as chairman with Dr. Isaac Peirce of Tazewell as a new member of that committee.

In accordance with action of the Council, the Society's office this year arranged for the commercial exhibits, with the splendid assistance of the local committee of arrangements and the management of the Cavalier. These exhibits are an important feature of our meetings and members are urged to visit them and get acquainted

with the representatives and with the products displayed.

Another action of the Council called for the formation of district councils composed of a doctor in each county of the State, with the councilors as chairmen of the various districts. The personnel of the councils is now on file at this office.

The financial year of the Society closes on September 30, after which the books will be audited and a full statement will be presented to the Council at its meeting in October and published with the minutes of the 1941 meeting.

AGNES V. EDWARDS,

Executive Secretary-Treasurer.

Publication and Program

This committee has held its usual meetings for the formulation of plans and policies. The improvement of the official publication of the Society, the VIRGINIA MEDICAL MONTHLY, has been foremost in its consideration. The burden of the committee's work, however, has been concerned with the program for the October meeting at Virginia Beach.

It is felt that the format of the MONTHLY has been improved by the elimination of advertising from the front cover page. This has been accomplished at the sacrifice of some revenue. From the favorable comments received it is believed that this change was in the interest of a better publication.

The program for the annual meeting, it is also believed, has been made more interesting by the institution of panel discussions, an innovation which will feature the Wednesday afternoon meeting. It has been found necessary again to divide the sessions of the meeting into sections in order to afford the authors of numerous volunteer papers an opportunity of presenting their contributions.

J. EDWIN WOOD, JR.

H. S. DANIEL

WYNDHAM B. BLANTON

Chairman.

Committee on Scientific Exhibits and Clinics

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

We are happy to state that in spite of war conditions, we have gotten together twenty-two regular and five hobby exhibits. The latter type of exhibit is an innovation and one which we hope will prove interesting and develop more and more in the future.

The list of regular scientific exhibits and hobby exhibits is published with the program.

Through the kindness of the Richmond Academy of Medicine and the Medical College of Virginia we were permitted to use their scientific exhibit booths. This framework is a great help and it enables us to reduce our overhead greatly. Without such a loan our scientific exhibits this year would have cost considerably more.

It is impossible to state what our expenses will be, as such cannot be computed until the meeting is over and the exhibit framework sent back to Richmond. We do our best to stay within our allotment of two hundred dollars (\$200.00), but that is not nearly enough and again we ask a much larger allowance, for getting up scientific exhibits is an expensive and most tedious task.

We feel that each year physicians are becoming more and more exhibit conscious and if we can build up that end of our convention we both will be well rewarded.

We look forward to the meeting and ask you to please encourage the exhibitors by visiting with them.

W. W. S. BUTLER

GEORGE A. DUNCAN

W. AMBROSE MCGEE

Chairman.

Department of Clinical and Medical Education October 6, 1940-August 14, 1941

The activities of the Department during the past year have been confined to two local postgraduate courses, assistance in the three postgraduate clinics at the two State Medical Schools, a short summer course at the University of Virginia, and assistance in the programs of two local medical societies. Six-weeks courses were conducted at Leesburg in Loudoun County and at Newport News and Hampton in Elizabeth City County. Assistance was given to the Danville-Pittsylvania County Medical Association by furnishing two speakers on its program and to the James River Medical Society by furnishing one speaker.

The programs of the two local postgraduate courses in Loudoun County and Elizabeth City County were printed in the June, 1941, issue of the VIRGINIA MEDICAL MONTHLY. Thirty-four doctors from that area attended the course offered by the Elizabeth City County Society which alternated its meetings between Hampton and Newport News. Fifteen doctors attended the course offered by the Loudoun County Society.

Assistance was given in the conduct of the clinics at the two Medical Schools as usual. The following speakers were provided for the 26th Semi-Annual Clinic on Obstetrics and Gynecology held at the University of Virginia in the fall:

Dr. H. H. Hazen, U. S. Public Health Service, Washington.

Dr. James R. McCord, Emory University, Atlanta.

Dr. H. Fred Traut, Cornell University, New York.

Dr. Maurice B. Strauss, Boston City Hospital, Boston.

Dr. E. C. Hamblen, Duke University, Durham.

Dr. Clarence J. Gemble, Milton, Mass.

Dr. David A. Cooper, University of Pennsylvania, Philadelphia.

A copy of the program of this clinic is printed in the November, 1940 issue of the VIRGINIA MEDICAL MONTHLY. Ninety-one doctors from Virginia, District of Columbia, and neighboring states attended.

The Twenty-seventh Postgraduate Clinic of the University of Virginia Department of Medicine was held in the spring with an attendance of eighty-three doctors. This clinic was conducted entirely by members of the

staff of the University of Virginia Department of Medicine and dealt with "The Present Concepts of Therapy".

For the annual spring clinic at the Medical College of Virginia, held in conjunction with the Stuart McGuire lecture, assistance was given in bearing the traveling expenses of Dr. L. R. Broster, of London, England, and Dr. Henry H. Beecher of Boston. The attendance of this clinic was sixty-six.

The total attendance at the three clinics held during the year was two hundred and forty.

The second Summer Short Course in Postgraduate Medicine was held at the University of Virginia during the week of June 16-21, 1941. An extended program consisting of lectures, clinics, ward rounds, and roundtable discussions was held. Members of the Department of Medicine of the University of Virginia together with Dr. Warfield M. Firor of Johns Hopkins University and Dr. Walter O. Klingman of the College of Physicians and Surgeons took part in the program. A total of thirty-seven doctors enrolled and attended the course. The Department of Clinical and Medical Education assisted with the publicity and was prepared to assist with expenses but fees covered the entire cost of the course.

Through the generosity of Dr. Hugh Trout, the sum of \$86.55 has been donated to the Department to be used in postgraduate medical instruction among Negro doctors in the State. Steps have been taken to utilize the sum for the purpose specified. The sum is being held by the Treasurer of the Medical Society of Virginia until such time as it is requested for use.

An itemized financial statement follows showing that a balance of \$460.32 is on hand to be returned to the Treasurer of the Medical Society of Virginia at the end of the year.

It is recommended that the Medical Society of Virginia be asked to appropriate an amount of \$1,200 for carrying on the work of the Department of Clinical and Medical Education during the coming year. This is the amount allowed for the past year and seems sufficient for the undertakings that may be carried out for the 1941-1942 year.

HUGH H. TROUT, *Chairman,*

GEORGE B. ZEHMER, *Executive Secretary.*

NOTE.—This report is to be submitted to the Department of Clinical and Medical Education for its approval at its next meeting.

FINANCIAL STATEMENT

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION

RECEIPTS:

Oct. 6	Balance on hand for Univ. of Va.	
	Short Course	\$ 27.85
Oct. 29	Medical Society of Virginia	600.00
Mar. 25	Elizabeth City County Med. Soc. Fees	95.00
Apr. 5	Elizabeth City County Med. Soc. Fees	15.00
Apr. 23	Elizabeth City County Med. Soc. Fees	10.00
June 4	Medical Society of Virginia	600.00
June 6	Loudoun County Medical Society Fees	65.00
Aug. 14	University of Virginia Short Course	28.10
Total Receipts		\$1,440.95

DISBURSEMENTS:

Nov. 14	Dr. Henry M. Hazen	\$ 11.00
Nov. 14	Dr. James R. McCord	36.80
Nov. 14	Dr. H. Fred Traut	30.00
Nov. 18	Dr. E. B. Strauss	57.24
Nov. 20	Dr. E. C. Hamblen	19.00
Dec. 26	Dr. Clarence D. Gemble	35.70
Jan. 8	Dr. Stanley Meade	17.00
Feb. 1	Dr. David Cooper	19.45
Feb. 1	Dr. Tiffany Williams	15.00
Feb. 7	Postmaster for stamps	30.00
Feb. 12	Dr. C. J. Andrews	10.00
Feb. 12	Dr. F. E. Boys	10.00
Mar. 28	Dr. J. Edwin Wood	29.50
Mar. 28	Dr. Oscar Swineford	35.30
Mar. 29	Dr. J. M. Meredith	31.00
Apr. 11	Dr. Wm. H. Parker	31.30
Apr. 25	Postmaster for stamps	25.00
Apr. 26	Dr. L. R. Broster	150.00
May 14	Dr. Henry H. Beecher	48.00
May 14	Extension Division—Envelopes	9.00
May 19	Dr. J. M. Arena	42.65
May 19	Dr. H. B. Mulholland	21.75
May 26	Dr. J. M. Meredith	22.80
May 31	Dr. T. J. Williams	23.20
June 2	Dr. Harry Walker	25.00
June 24	Univ. of Va. Short Course (Dr. Staige Blackford)	27.35
June 23	Dr. R. A. Ross	37.50
Aug. 14	Extension Div. for secretarial services	125.00
Aug. 14	Exten. Div., supplies, telephone, etc.	4.89
Aug. 14	Balance on hand	460.32
Total Disbursements		\$1,440.95

GEO. B. ZEHMER,
Executive Secretary.

Legislation

During the last meeting of the General Assembly, among other matters which arose pertaining to the practice of medicine in Virginia, was House Bill 120 purporting to regulate the practice of Chiropractic. It was proposed to establish a Board of three Chiropractors to license and control this cult independent of any other authority. Despite opposition by the State Society, State Board of Medical Examiners and State Board of Health, this Bill was reported out by a large majority. Upon reaching the floor of the House it was re-committed and did not reappear. During these hearings many illegal practitioners boastfully flaunted breaking the law, and it was apparent that many of the law-makers were wholly unaware of the viciousness of the situation. Somewhat as the result of this experience, the Committee on Legislation directed the attention of this Society to the matter of controlling the activities of this large body of self-confessed law-breakers and urged special study of the problem. Also the Committee on Medical Economics called attention to the control of illegal practitioners and recommended a change in the By-Laws of the Society permitting increasing dues by \$2.00 annually for the creation of a special fund for "(1) the control of illegal and irregular practitioners of the healing arts, and (2) educational efforts to acquaint the Legislators and prosecutors of the State with the development and administration of the Medical Practice Act, and further recommend that the administration of the above-men-

tioned special fund* be entrusted to a special committee composed of the President of the Medical Society of Virginia, the Chairman of the Legislative Committee, and the Chairman of the Committee on Medical Economics, subject to the control of the Council and House of Delegates of the Medical Society of Virginia." It was also recommended that the Council of the Medical Society of Virginia be authorized to obtain legal talent for advice and guidance.

At the meeting of the House of Delegates July 29, 1940, the following was proposed:

"BE IT RESOLVED:

"1. That the activities of the Legislative Committee be broadened and made continuous.

"2. That the Legislative Committee be increased to nine members, with an effort made for geographical distribution of these members over the various sections of the State.

"3. That the cost of the program incident to the work of the Legislative Committee be provided for out of the Emergency Fund created by increasing the dues; and

"4. That each component society of the Medical Society of Virginia be requested to appoint a local representative who will be the Chairman of the Local Legislative Committee, maintaining close contact and cooperation with the work of the Legislative Committee of the State Society."

Since this required a change in the By-Laws, the resolution was tabled until the next meeting on July 30, 1940. The resolution passed with an amendment to have at least three members from Richmond so that the Committee could meet more frequently.

In consequence of the foregoing, your Legislative Committee has had a very active year, but only a few of the highlights will be included in this report.

The first meeting of the full Legislative Committee was held at Richmond, November 25, 1940, at which the President, President-Elect, Chairman of the Committee on Medical Economics, and Secretary of the State Board of Medical Examiners were present. At this meeting approval was given to the employment of Mr. R. C. Duval, of Duval and Duval of Richmond, as Counsel, and it was decided to proceed with the prosecution of illegal practitioners. It was further agreed that an effort would be made to familiarize the members of the Medical Society of Virginia with the Medical Practice Act. To this end a statement was prepared and carried as an Editorial in the February issue of the VIRGINIA MEDICAL MONTHLY. This will soon be distributed to the District Councils throughout the State.

Concerning legal activities, we will confine this report to a synopsis submitted by our attorney, which will be presented at the first meeting of the House of Delegates.

IN CONCLUSION, this Committee recommends the retention of Mr. Duval as counsel. He recommends:

1. That an effort be made to strengthen the Medical Practice Act.

*A report on the Special Fund for work done by the Committee will be presented in the House of Delegates.

2. To expressly authorize the use of injunction in the enforcement of the regulatory provisions of the Act.

3. To expressly forbid and make criminal the practice of medicine without a certificate from the Board of Medical Examiners.

We wish to thank our Attorney, the President of the Society, the Secretary of the State Board of Medical Examiners, the Executive Secretary, and others for their cooperation.

J. MORRISON HUTCHESON
CHARLES CARAVATI
J. D. WILLIS
C. C. SMITH
J. C. MOTLEY
W. D. KENDIG
J. B. MCKEE
ALEXANDER ROBERTSON
DEAN B. COLE

Chairman

Medical Economics

Medical organizations, and the individuals composing those organizations, have been so occupied with the workings of the National Defense Program, that there has been little referred to the Committee on Medical Economics this year. New legislation proposed or enacted has been almost entirely of a defense and preparedness nature. The unsettled state of affairs has prevented the suggestion or introduction of any radical plans for the extension of medical facilities. Consequently the report of your committee relates more to general policies, and to certain local conditions than is usual.

I. The patriotism of the medical profession, demonstrated so frequently in the past, again runs at fever heat. No demand is too great, and no sacrifice is refused, when the profession is asked to do what amounts to much more than its proportionate part. The memory of past and present prosecutions and persecutions have in no way deterred the medical profession, individually and collectively, from full and sacrificial cooperation. That is as it should be. The defense program is paramount. The democratic way of life must be preserved and no sacrifice is too great. Rights and privileges which we have enjoyed, even certain of our liberties, may be temporarily shelved in the interest of the defense program.

But there is another aspect. In all national emergencies there have been self-seeking minorities who have selfishly utilized the fears such occasions engender to attain their own ends. That is no less true now, and while we are cooperating willingly and sacrificially, organized medicine must be alert to prevent measures which are gladly accepted in the necessity of the emergency, from being made permanent. The excuse of the national emergency must not be used by interested minorities to change permanently the status of American Medicine. Changes in accord with social progress are necessary, but ill considered emergency measures, cannot replace the progress and growth of years of evolutionary experience.

II. Your committee desires to commend the efforts of the Legislative Committee and the Special Committee in carrying out the instructions given by the State Society in 1940. With the active support and cooperation of the membership of the Medical Society of Virginia, their program will make real progress in controlling the activities of the illegal and unqualified practitioner.

III. The recommendations of the Economics Committee, accepted by the House of Delegates in 1940, directed the appointment of county representatives to cooperate with the Councilors in each district in carrying out the program of the House of Delegates and the Council. These representatives have been appointed and are already materially assisting the Council in the interim activities of the State Society. Appropriate amendment to the constitution is necessary to legalize the county representatives, and your committee recommends the adoption by the House of Delegates of the amendment, which will be introduced.

IV. The problem of Medical Care to the jail population in the cities and counties of Virginia was considered by your committee. It is quite evident that the present system needs overhauling and change, to correct existing injustices to both the sick or injured prisoner and his attending physician. It is recommended that the Legislative Committee be requested to consult with the appropriate committees of the State Legislature, and endeavor to work out with them acceptable corrections.

V. Your committee commends the various surveys now being made in Virginia into: (1) The problem of nutrition, (2) The availability and supply of rural medical and hospital care, and (3) The adequacy, character of, and compensation for medical care of the indigent and low-income groups. Such surveys properly conducted will give valuable information, and we request all physicians in the areas surveyed to cooperate in every way possible with those conducting the surveys.

VI. Your committee wishes to repeat its 1940 recommendation for the support of the National Physicians' Committee. Recent decisions tend to emphasize the potential value of such a committee to the cause of American Medicine.

Respectfully Submitted,

GUY FISHER
A. B. HODGES
JAMES P. KING
H. A. LATANE
CARRINGTON WILLIAMS
JOHN HUNDIEY, JR.
Chairman.

Membership Committee

No applications for membership have been presented during the past year from doctors not affiliated with a component organization. In spite of the large number of doctors called into Government Services, our membership is at a new high peak at this time.

Notices of deaths of members, as far as they could be obtained, have appeared in the various issues of the

MONTHLY, and their names will be presented at the annual meeting.

In appreciation of the splendid service rendered by our President, Dr. Walter B. Martin, we propose his name for Honorary Membership in the Society.

D. M. KIPPS
ISAAC PEIRCE
J. BOLLING JONES
Chairman.

Ethics

TO THE HOUSE OF DELEGATES:

This Committee has no report as no matters have been referred for its consideration.

J. R. GORMAN
R. L. RAIFORD
I. C. HARRISON
Chairman.

Advisory Board to Woman's Auxiliary

The following have been approved by the Advisory Board to the Woman's Auxiliary of the Medical Society of Virginia:

1. Public Relations.
2. Program and Health.
3. Legislations.

Authorizations to organize new local auxiliaries.

Approval for State auxiliaries to join the Virginia Council of Legislative Women.

All committees have functioned very well.

SHEPPARD K. AMES,
Chairman.

Judicial

We, the Judicial Committee, beg leave to recommend the following changes (*indicated by italics*) in the CONSTITUTION AND BY-LAWS of the Society.

1. CONSTITUTION, Article 6—COUNCIL: Commencing at fifth line, change to read: "The Council shall consist of one member from each *Councilor* District of the State" etc.

2. CONSTITUTION, Article 8—STANDING COMMITTEES: Omit "and" before (7) and after Ethics. Add: *and (8) Judicial.*

3. BY-LAWS, Article 8, Section 3, change to read: "Four members of the Council, together with the President or *First Vice-President*, shall make a quorum."

4. BY-LAWS, Article 9—STANDING COMMITTEES. Add: *8. Judicial.*

We also submit the following amendment for consideration:

ARTICLE 8, BY-LAWS, ADD:

7. *The State shall be divided into ten Councilor Districts.*
8. *Each Councilor District shall have a district council composed of members from each county, the State Councilor of that district to act as chairman. The purpose of these district councils is to bring the individual physician of the county in closer contact with the Society and its needs.*

We further recommend that a committee be selected, or appointed, to confer with the Medical Examining Board, looking to revision of the Medical Practice Act.

P. W. BOYD
P. W. MILES
G. W. HOLLAND
F. A. FARMER
P. ST. L. MONCURE
Chairman.

Child Welfare Committee

Once again your Committee is impelled to report that Child Welfare in Virginia is being seriously handicapped by a lack of sufficient funds to carry on the work along lines accepted generally as essential in a well-balanced program for the care of children.

Perhaps the most outstanding event of the present year is the study of Child Welfare in Virginia, now being made by the Virginia Legislative Advisory Council through its Child Welfare Committee with Mr. C. G. Quesenberry of Waynesboro, as chairman. Mr. John B. Spiers of Radford, is chairman of the Council. In the last annual report of your Committee, the attention of the Society was called to this study. Because of its magnitude, it is highly probable that the study will be continued through another biennium. It is not too much to hope for important revisions in the scope and financial support of Child Welfare in the State. Certainly the Legislature will not lack for information concerning the subject.

Your Committee met with the Legislative Advisory Council's subcommittee on Child Welfare and submitted a number of matters of interest to the Society. It has suggested that the sub-committee recommend to the Council the adoption of your Committee's recommendations to the House of Delegates last year (and adopted by that body), that, as a beginning, three Mental Hygiene Clinics be established, mainly for diagnostic, but also for therapeutic work; two of the units to be traveling clinics, the other to be located in Richmond.

There was also presented for consideration the matter of extending benefits of full-time health units to all the counties of the State, pointing out that whereas forty-seven counties of the State, representing more than one and a quarter millions of population, now receive the benefit of full-time health units, fifty-three counties, comprising a population of 649,115, or about 32 per cent of the rural population, do not receive this service. The cost of the extension of such service to all the counties would entail an additional outlay, variously estimated at from \$240,000 to \$327,000. Such an extension of county health work would automatically cause a tremendous improvement in maternal and child health work, to say nothing of other important and lasting public health services. The members of your Committee feel that at this time the creation of county health units in all the counties of the State constitutes for maternal and child welfare the most important single health measure which the State can undertake.

Other matters presented to the Legislative Council

include an additional appropriation of \$10,000 for the use of the Commission for the Blind under the direction of the executive secretary, Mr. L. L. Watts;

The need for *legislation* providing for a Department of Health Control over Sectarian and Non-Sectarian Schools;

The need for *legislation* to require annual x-ray examination of all teachers in the primary schools of the State;

The need for additional funds for the extension of the educational and other facilities of both the colored and white industrial and normal training schools;

The need for expansion of facilities at the institutions for care of the feeble-minded and epileptics, white and colored;

The need for support of the request of the Superintendent of Public Instruction, Dr. Sidney B. Hall, for additional funds for physically and mentally handicapped children; and

The need for additional beds for the care of colored crippled children and for tuberculous children, white and colored, who are not crippled.

Your Committee wishes to urge the employment of a full-time pediatricist on the Staff of the Department of Health. Such an individual could render aid in organization work for children in the counties and could serve as a "Hoater" in well-baby clinics, especially in certain defense areas and in other places where trained pediatricists are not available.

Your Committee recommends the employment of one or more full-time *nutritionists* by the Department of Health, as funds are available. Educational work in nutrition could be carried on by such a worker, operating through local county and city health units and in the communities of the State generally. Interest in nutrition has been greatly stimulated by the increasing knowledge of the role of vitamins in food and by the obvious deficiencies occurring in large groups of the populace. A moving picture, entitled "Food Makes a Difference" is available at the State Department of Health for public use in any community in the State.

Funds should be made available that the dental service now rendered by the State Department of Health may be extended to cover, insofar as practicable, the field of nutrition in dentistry.

The Committee heartily commends the work of Dr. A. L. Carson in establishing a Premature Station and Training Center at Lynchburg on November 15, 1940. A member of your Committee, Dr. E. A. Harper, is in charge of the service. A nurse trained in the care of premature infants was secured from the Sarah Morris Hospital in Chicago. She served for three months and the work was then carried on by local nurse supervisors who had received special training during the three-months' period. Beside the local service, two months of intensive training in the care of prematures is offered to pediatric nurses from hospitals throughout the State. Only two trainees are accepted during any one period. They are given both practical experience and didactic teaching. On completion of the course, the

trainees should be able to establish premature nurseries in their own institutions. By August 31, 1941, eight representative hospitals in the State will have had a pediatric nurse complete the course. The State Department of Health serves in an advisory capacity to the premature stations.

It is hoped that this program will stimulate further interest in the care of premature infants. The maternity law which became effective on January 1, 1941, marks another milestone in the care of premature infants and maternity patients. Already there has occurred a rise in standards which augurs well for continued improvement.

The infant death rate in Virginia continues to show a gradual but gratifying fall. In 1936, the rate was 74 per thousand live births, and in 1940 was 60.1. The rate is still high when compared with the United States as a whole, viz., 57.1 in 1936 and 48 in 1940. About half the infant rate in Virginia occurs during the first month of life. With more general use of vitamin K as a prophylactic, this may be expected to fall somewhat.

Under the supervision of the Bureau of Maternal and Child Welfare, the number of well-baby clinics held in Virginia last year were-----	49
Number receiving both mother and infants--	69
Number of maternal clinics-----	30
Well-baby visits (rural) to clinics-----	4,601
Pre-school visits (rural) to clinics-----	5,571
Well-baby visits (urban) to clinics-----	12,437
Pre-school visits (urban) to clinics-----	7,514

DEATHS IN 1940

Whooping cough -----	133
Scarlet fever -----	13
Measles -----	21
Diphtheria -----	51
Pneumonia (all types under 10 years)-----	613
Infantile diarrhea (under 2 years) -----	281

Your Committee urges a more general use of Sauer's pertussis vaccine and that in young children the dosage be repeated at the end of three years.

It again urges that additional funds be made available for use in the prevention of diphtheria and small-pox and that anti-luetic drugs be more widely distributed for the care of indigent syphilitics.

There were 709 cases of diphtheria reported in 1940. The deaths (51) established another new low mark for this disease. Nevertheless, your Committee wishes to urge the use of two doses of alum precipitated diphtheria toxoid at an interval of three or four weeks, rather than the single dose method in current use.

Tuberculosis—Deaths from this disease in 1940 were: white 732, colored 328, total 1,560. Rate per 100,000 population: white 36.2, colored 124.6, total 58.1. In 1939, there were 1,639 deaths, with a rate of 60.9. It will be noted that there were 79 fewer deaths from this disease than in 1939. The deaths among children in 1940 were: white 32, colored 57, total 89.

The new photo-fluorograph x-ray machine, using a 35 mm. film and capable of taking almost one chest photo per minute, now being used under the supervision

of Dr. E. C. Harper of the Tuberculosis Out-Patient Department of the State Department of Health, bids fair to do much toward the early recognition of the disease and toward preventing its spread among the populace generally, thereby aiding in the protection of children.

It is the belief of your Committee that facilities for the care of the so-called pre-tuberculous children in "Preventoria" should be employed only for the actively tuberculous children.

On May 1, 1940, under the direction of Dr. Harper, there was organized a department for research in rheumatic fever and cardiac disease in children. This group has uncovered some 106 cases of rheumatic fever, many of these with unsuspected cardiac disease and has arranged for hospitalization, observation in a convalescent home and for follow-up care. This bids fair to be a most important asset to the public care of children.

It is the consensus of your Committee that greater protection should be afforded the so-called "illegitimate" group of children in the State. The stigma of "illegitimacy" will not contribute to their future as citizens, nor will it be of advantage to the State. A greater regard for the individual who, after all, is the victim of the "illegitimacy" of his parents, should demand that his position in the community be not jeopardized by the stigma of such a characterization. Better reporting of such cases and a more careful placing in foster or institutional homes may prevent much of the unhappiness which sometimes follows the individual through life.

Finally, your Committee would urge that the Legislative Committee or other suitable committee be authorized to confer with the State department heads before the biennial State Department budgets are constructed that the recommendations of this and other Committees may be properly presented for consideration by the Director of the Budget, by His Excellency the Governor, and by the Legislature of Virginia.

- J. B. STONE
- E. A. HARPER
- C. E. CONRAD
- J. N. WILLIAMS
- W. B. MCLWAIN
- R. D. BATES
- J. M. BISHOP
- L. T. ROYSTER
- F. D. WILSON

Chairman.

Maternal Health

Your committee has continued to work along the lines outlined in our last report. The Maternity Hospital Law is now in operation. Under its provisions, hospitals caring for maternity patients and newborn infants are inspected by the Bureau of Maternal and Child Health of the State Health Department. The doctors who are doing this inspection, report that the hospitals are meeting the requirements of the law, and are showing a co-operative spirit in improving maternal and infant care in every way possible.

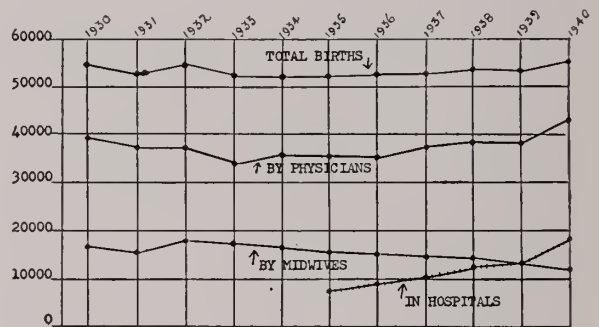
Seventeen prenatal clinics were established during the

TABLE I
COMPARISON PRENATAL CLINIC SERVICE BY YEAR FOR
PAST THREE YEARS

	—YEAR ENDED—		
	JUNE 30, 1939	JUNE 30, 1940	JUNE 30, 1941
Number of prenatal clinics	80	84	99
New prenatals registered	4,767	6,261	7,608
Total prenatal visits ----	18,687	26,919	32,233
Total postnatal visits ----	2,711	3,598	4,434
Clinicians participating --	210	250	280

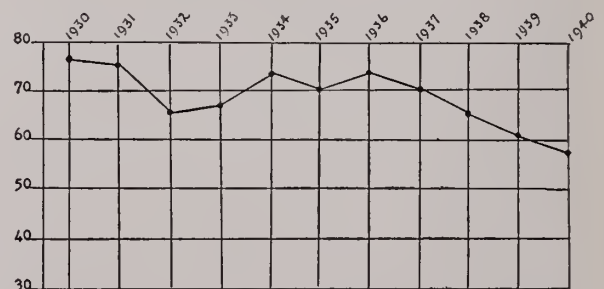
year that ended June 30, 1941, and two were discontinued. There are now 99 prenatal clinics operating in Virginia. Seven thousand six hundred and eight new patients registered at the clinics during the year, and 32,233 visits were paid to the clinics. The very satis-

TABLE II
BIRTHS IN VIRGINIA



factory growth in the work of the clinics is shown in Table I, which was prepared by the Board of Health. Table II shows the attendance at birth for the past ten years. It will be noted that in the past five years there has been a constantly increasing number of births

TABLE III
VIRGINIA INFANT DEATH RATE*

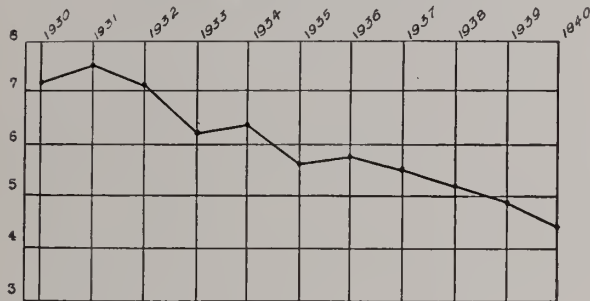


in hospitals. In reviewing the details of the maternal deaths, one gets the impression that the complicated case is not sent to the hospital early enough. Ideally, these patients should be hospitalized at the first intimation of danger and not when they are in extremes, and, as the work of the clinics increases, it is hoped that this ideal may be approached more closely. The prospective mothers of Virginia must be taught that they should be under medical supervision, either by their own physician or at a clinic, throughout pregnancy.

*Per 1,000 live births.

The case histories of maternal deaths, as compiled by Drs. Carson, Shamherger and Winn, of the State Health Department, have been reviewed by each member of the committee individually. The committee has had two meetings at which 225 reports have been discussed. The unanimity of opinion concerning most of the cases has

TABLE IV
VIRGINIA MATERNAL DEATH RATE



been surprising. In the few cases where there has been disagreement, the committee has come to an unanimous agreement after discussion.

Thirty-one or over 13 per cent of the deaths charged to obstetrics have been medical. The uncorrected maternal death rate is shown in Table III. The death rate for infants under one month is shown in Table IV.

The Committee requests that the same appropriation for postage and incidentals be made for next year.

C. J. ANDREWS
A. M. GROSECLOSE
E. B. KILBY
W. S. L. MCMANN
J. A. OWEN
T. J. WILLIAMS
M. P. RUCKER

Chairman.

Walter Reed Commission

Your Committee wishes to report that Belroi, birthplace of Walter Reed, is in good condition, and members are invited to visit this shrine when in its vicinity.

We recommend a continuance of fire insurance on the house and an additional appropriation of \$60.00, or as much thereof as needed, for upkeep of the property during the coming year.

J. D. CLEMENTS
JAS. W. SMITH
C. P. JONES

Chairman.

To Arrange Program for Health Division of Virginia Welfare Conference

TO THE HOUSE OF DELEGATES:

In October, 1940, Dr. Walter Martin appointed a special committee to arrange the program of the Health Division of the Virginia Welfare Conference which met at Roanoke, Va., April 25 and 26, 1941. A conference was held with Dr. Jas. N. Williams who was in charge

of the program of the Mental Hygiene Society of Virginia. At this same meeting and because of lack of time on the program, it was decided by the Mental Hygiene Society of Virginia and the Medical Society of Virginia to sponsor the program jointly. A satisfactory program was arranged with a number of outstanding speakers.

D. C. WILSON
J. M. HURT
F. P. FLETCHER
C. F. GRAHAM
T. DEWEY DAVIS

Chairman.

Pneumonia Commission

At this time the Pneumonia Commission can only make a brief report stating that a more elaborate accounting of its activities will be made before the House of Delegates of the Medical Society of Virginia at its Virginia Beach Meeting in October.

WYNDHAM B. BLANTON,
Chairman.

To Confer with State Board of Nurses' Examiners

The Committee has held one meeting with the State Board of Nurses' Examiners. The Board had prepared a curriculum of 690 instead of 1,060 hours to be used in the nursing schools of this State, which would provide the minimum requirements for nurses to be recognized in all but one state. It was said that while this would permit nurses to take the Virginia State Board, it did not meet the curriculum required by the National Board nor the American Red Cross, this latter being the standard for nursing in government services. However, no plan had been developed by which the three to four hundred hours taken from didactic work would be given to practical work, and the Committee felt something should be done about this.

The Chairman of the Committee offered a plan that was felt would relieve many of the difficulties that now loom as real obstacles between the nursing profession and the private and semi-private hospitals of the State. In the City of Richmond, there are, for example, five privately owned hospitals, one State controlled hospital, and one run by a board of ladies. This necessitates seven training schools for nurses. The plan was that there would be a central training school for pre-hospital nursing for the entire State. This might be under the auspices of the State Department of Public Instruction or it might be undertaken by the Medical College of Virginia and the University of Virginia. Here young women who are qualified to enter training schools would get their preliminary or pre-hospital training which is largely didactic and if necessary they could occupy one full year in the study of all these subjects. Upon passing satisfactory examinations, they would then be certified to the various hospitals in the State for their practical training. This would eliminate the first year's didactic instruction in the hospitals, which is the bugbear of the present system. The saving in money would enable the hospitals to give better and more adequate super-

vision in practical training and would be reflected in a saving to the individual nurse in the cost of her tuition. The nurses seemed interested in this plan and the chairman was subsequently invited to meet with them at their annual session at Old Point on March 28, where he elaborated this plan in more detail.

RUSSELL BUXTON
C. B. MORTON
FRANK S. JOHNS
ELISHA BARKSDALE
ALFRED P. JONES
W. L. PEPLE

Chairman.

Syphilis Control

Owing to vacations, it was impossible to hold a meeting of this committee in time to approve a report to be published in the September MONTHLY. This will be presented in the House of Delegates.

E. E. BARKSDALE
D. C. SMITH
JAMES W. LOVE
W. B. PORTER
R. D. KIMBROUGH

Chairman.

Tuberculosis

The Committee met in Richmond July 19, 1941, with all of its members present. Also, Dr. Dean B. Cole was invited to meet with the Committee.

A review of tuberculosis work in Virginia conducted by the various agencies, official and otherwise, during the past twelve months has shown a steady expansion. Some of the notable achievements are as follows:

COLLAPSE THERAPY IN THE FIELD:

Two pneumothorax stations have been added to the list since the last report, making a total of fifty-eight (58) now in operation by local physicians at widely scattered points throughout the State. This arrangement makes it possible for almost any patient desiring it to continue pneumothorax after leaving the Sanatorium. Five hundred (500) patients (358 white and 142 colored) are receiving treatments at these clinics, and three hundred and sixty-six (366) have discontinued the treatment since this program was started in the summer of 1938.

Seven general hospitals have continued to do major chest surgery. During the past fiscal year (July 1, 1940 to June 30, 1941) at these hospitals one hundred and sixty-three (163) patients had a total of two hundred and sixteen (216) operations. These consisted of thoracoplasties, pneumonolyses, extrapleural pneumothorax and bronchoscopies, and includes only patients whose hospitalization was paid for out of the fund provided for this by the General Assembly. Many other patients were operated on at these hospitals who defrayed their own hospital expenses.

VIRGINIA TUBERCULOSIS ASSOCIATION DURING 1940:

The Virginia Tuberculosis Association continued its extensive program of educational work with moving pic-

tures, lectures and literature, reaching a great cross section of Virginia communities. Educational movies on tuberculosis were shown to 46,444 adults and high school pupils, in addition to several medical societies, service and social clubs, etc. Reports from the county and city branches of the Association show that during 1940 approximately \$131,426.00 was spent by these organizations. These funds were used largely for x-rays in case finding, programs of education, sanatorium treatment, nursing service and home care of tuberculosis.

DEATH RATE:

The death rate in the State from all forms of tuberculosis in both races has continued to decline during the past twelve months. The latest report from the Bureau of Vital Statistics shows 1,550 deaths in 1940, as compared to 1,596 reported in the previous year.

BEDS FOR TREATMENT:

At present there are in the State approximately 1,643 beds (1,039 at State and 604 at Municipal Sanatoria) for the treatment of tuberculosis. About 445 of these beds are for negroes. The National Tuberculosis Association advises that there be at least two beds available for treatment to every death which occurs from tuberculosis. On this basis Virginia has almost two beds for whites, but only slightly more than one-half of a bed for negroes. With the present plans for increase at Piedmont Sanatorium over the next four years, it is believed that most of this shortage will be overcome and there will be less congestion on the waiting list than exist at the present time.

There is also need for more infirmary type of beds to care for white patients. The modern treatment of tuberculosis requires facilities different from those available in past years when sanatorium patients were mostly ambulatory and we depended almost entirely on bed rest to heal the pulmonary disease. The various forms of collapse therapy used today make it necessary for a much larger proportion of the sanatoria beds to be of the hospital kind to properly care for these surgical cases. Plans are also under way for this handicap to be corrected over a period of the next two to four years.

TEACHING TUBERCULOSIS:

There was a discussion on the need for standardizing and for devoting more time to the teaching course on Tuberculosis for medical students at the two State Medical Schools. It is believed by the Committee that if the students are thoroughly trained in the principles of early diagnosis and proper treatment of tuberculosis while in school it will very materially assist in the eradication of the disease.

TUBERCULOSIS AND DIABETES:

The subject of Tuberculosis and Diabetes co-existing was discussed and it was agreed that there should be some better arrangement provided for the care of these cases. It is believed that if the diabetes is mild and the tuberculous process is suitable for collapse therapy, some definite benefit may be gotten from institutional treatment.

TUBERCULOSIS IN PREGNANT WOMEN:

A plan is now being worked out whereby pregnant women with tuberculosis may be admitted to the sanatoria. There, jointly with visiting competent obstetricians and the sanatorium staff the cases would be completely worked out and a decision reached as to whether the pregnancies should be terminated or permitted to go to term. If permitted to go to term, they would be sent to a general hospital for delivery and returned to the sanatorium ten days after delivery to continue with the treatment of the chest condition. The necessary arrangements would be made for the family to remove the baby from the hospital when it was ready to leave. This would make collapse therapy available to pregnant women with tuberculosis when indicated.

PANEL DISCUSSION:

With the assistance of the Program Committee and the Secretary, arrangements have been made for a panel discussion on Tuberculosis at the fall meeting of the State Society. Of the many advantages to be gained by this the most important perhaps would be to help the physicians in the field who are running the pneumothorax refill stations, and who are assisting with the collapse therapy program. An attempt will be made to clear up many of the problems which are now confusing them.

ORGANIZATION OF A SOCIETY:

The Committee feels there is a need in the State for an organization of the chest men into a society, which would have a clinical meeting each year when the State Society is in session.

RECOMMENDATIONS:

1. That a standardized course of teaching tuberculosis, which would provide sufficient time for the subject, be arranged at the two State Medical Schools.
2. That the proposed plan be adopted so that pregnant women with tuberculosis may get adequate treatment for their chest conditions and continue to term with the pregnancy if advisable.

Respectfully submitted,

EDGAR C. HARPER
C. LYDON HARRELL
FRANK B. STAFFORD
Chairman.

Advisory to State Department of Health

There has been nothing referred to the Advisory Committee of the State Department of Health this year, so there is no report.

F. H. SMITH
Chairman.

Cancer

TO THE HOUSE OF DELEGATES:

Your Cancer Committee has had no meeting since the last meeting of the House of Delegates as there have been no requests for the certification of Tumor Clinics.

Throughout the year the Chairman has been in receipt

of clinical reports on all cases treated at these Clinics at the expense of the Virginia Cancer Foundation.

EDWIN P. LEHMAN

Chairman.

Industrial Health

TO THE MEMBERS OF THE HOUSE OF DELEGATES:

The Committee on Industrial Health was enlarged this year from three members to seven members. The Committee this year stands as given at the bottom of this report.

The Committee sponsored a meeting on industrial health before the Clinch Valley Medical Society at Norton, Virginia, on October 18, 1940. This meeting was well attended and seemed to be very helpful.

We also sponsored the symposium on industrial health, which was held at the Medical College of Virginia, on September 11 and 12, 1941. On this two-day and a night program were some of the outstanding leaders in industrial medicine and surgery and hygiene in the United States. Fortunately, the symposium and the meeting with the Clinch Valley Medical Society were taken care of without any expense to the Medical Society of Virginia.

The Committee also worked with the American Medical Association's Council on Industrial Health in getting a rather complete list of all the medical men in Virginia doing full-time or part-time industrial medicine. This request to the American Medical Association's Council came from the National Defense Council and the United States Army.

Several men on the Committee have volunteered to abstract important articles in industrial health and medical literature for publication in the VIRGINIA MEDICAL MONTHLY.

At this year's meeting of the Society—as was done at the meeting last year—the Committee is exhibiting in the scientific exhibit the American Medical Association's exhibit on industrial health.

The Committee voted, toward the end of the year, to sponsor five or six industrial health meetings at strategic points throughout the State in cooperation with the local medical societies. This program should help to interest many physicians in the opportunity for industrial medical practice. The carrying out of this, of course, will be in the hands of the Committee that will be appointed for next year.

Respectfully submitted,

C. B. BOWYER
W. R. WHITMAN
H. T. HAWKINS
H. U. STEPHENSON
GEORGE McL. LAWSON
J. B. PORTERFIELD, *Secretary*
FRED J. WAMPLER, *Chairman*

Representative to Virginia Welfare Council

The only meeting of the Virginia Welfare Council for the year was held May 28, 1941, at Richmond, Virginia. This was a joint meeting of representatives of the Vir-

ginia Conference of Social Work and of the Virginia Welfare Council.

The purpose of this meeting was to merge the Virginia Conference of Social Work with the Virginia Welfare Council.

A number of resolutions were adopted, but the only ones which concern the Medical Society of Virginia are Paragraphs 6 and 7, as follows:

Paragraph 6. Membership would of necessity be in the Virginia Conference of Social Work. Delegates from organization members and individual members of the Conference who so desire would have an affiliation as outlined in Paragraph 3. Participation in the Section on Social Action should not exclude participation in any other section or activity of the Conference.

Paragraph 7. Summary—The activities of the present Welfare Council would, under this plan, be assumed by a permanent section of the Virginia Conference of Social Work, to be called the "Section on Social Action". There would no longer be two organizations, but one—namely, "The Virginia Conference of Social Work". The Section on Social Action of the Conference would endeavor to stimulate and influence the non-professional social forces of the State as an important part of the year round activities of the Conference, in an attempt to attain the first objective of the Virginia Conference of Social Work as given in Article 2 of its constitution, namely, "To foster an intelligent interest in and understanding of social problems and social work, especially as they affect the State of Virginia".

RECOMMENDATION: That the chairman of the committee to arrange the medical program for the Virginia Conference of Social Work he also named delegate to the Section of Social Action of the Virginia Conference of Social Work.

F. P. FLETCHER.

Delegates to the American Medical Association Cleveland, June 2 to 6, 1941

The House was called to order on June 3, Dr. H. H. Shoulders presiding. The Secretary reported that out of a total membership of 171, 164 delegates had registered and been seated. Dr. Van Etten, the President and Dr. Frank Lahey, the President-elect, made interesting addresses.

The first order of business was the report of the Medical Preparedness Committee, of which Dr. Irvin Abell is Chairman. That report is of so much interest to the members of the medical profession that we would suggest that you read it in its entirety. It appears in *The Journal of the A. M. A.* of June 21, on pages 2777 to 2782, inclusive. Dr. Abell stated that the American Medical Association had sent out more than 180,000 questionnaires and that up to April 1, 1941, 150,407, or 82.9 per cent, had been returned and that 138,263 had been tabulated on punch cards which would make their data immediately available to the Federal Government.

He stated that it was a policy of Brigadier-General Lewis B. Hershey, Deputy Director of Selective Service, to interfere as little as possible with the supply of doctors graduating from year to year. This is a direct quotation from General Hershey's report: "It is of paramount importance that the supply be not only maintained, but encouraged to grow and that no student or intern, who gives reasonable promise of becoming a successful

medical doctor, be called to Military Service before attaining that status." He stated, however, that graduate doctors, in the Selective Service age should apply for commissions in one of the Federal Medical Services in order to be placed in the deferred class.

The Committee also recommended that wherever possible to do so, without draining our own supply of young doctors, an effort should be made to meet the request of Great Britain for volunteer physicians from the United States.

It was suggested by the Council on Scientific Assembly that the A. M. A. meeting in Atlantic City in 1942 be made a Pan-American meeting and that representatives from all South and Central American Countries, Mexico, Cuba, Porto Rico and Canada be invited to attend and participate.

One of your representatives (Martin) offered a resolution requesting further standardization for serological tests for syphilis. This was referred to the Reference Committee on Miscellaneous Business and both of your representatives appeared before that Committee in behalf of the resolution. The Committee reported, however, that they felt that sufficient data had already been placed on file in the office of the Surgeon General of the United States Public Health Service, that this data was easily available, and that it would not be necessary for the House of Delegates to take any action at this time.

The Tuesday afternoon session was an Executive session and a full report of the suit against the American Medical Association and the Medical Society of the District of Columbia was made by Dr. Arthur W. Booth, Chairman of the Board of Trustees. Mr. E. M. Burke, the counsel for the A. M. A., in this suit, was present and outlined the steps of the suit and the probable effects of it on the future actions of the American Medical Association. After a very full discussion a motion was made that the Board of Trustees be instructed to direct counsel for the American Medical Association to appeal the judgment based on the verdict "Guilty" and take all steps necessary to carry the case through the higher courts.

A resolution was offered that the Medical Examiners be paid for their services on the Draft Boards. This was referred to the Committee on Military Preparedness and the Committee stated that since there are many more laymen than physicians serving the Selective Service Boards, without pay, the Committee feels "It would be against the adopted policy of the American Medical Association to recommend that the physicians serving these Local Boards be paid, because the American Medical Association has pledged its utmost service to the Government in behalf of The National Defense Program".

There were resolutions offered by Delegates of at least two states who feared that the actions of various Specialty Boards were going to interfere with hospital privileges of doctors who were not eligible for certification by these Boards. One of these resolutions was to the effect that there should be constituted a Board for General Practitioners which would assure General Prac-

tioners the usual privileges that they had heretofore enjoyed in hospitals. These resolutions created quite a good deal of discussion and produced the following comment from the Committee on Miscellaneous Business: "Your Reference Committee has become aware that certification boards are becoming a sore spot in our medical body. It believes that certification boards have their proper place and function, but evidence of unnecessary irritation among the rank and file is becoming evident. It hopes that the House of Delegates will not feel that this Reference Committee is exceeding its functions if it suggests that the Council on Medical Education and Hospitals may have made a mistake in permitting the Specialty Boards to slip out from under the control and jurisdiction of the American Medical Association. Perhaps it is not too late, by proper contact methods, to re-establish such control. Meanwhile your Reference Committee regrets that it cannot recommend for approval the resolution suggesting a certification board for general practitioners."

At the final session Dr. Fred W. Rankin of Lexington, Kentucky, was unanimously elected President-elect, Dr. Charles A. Dukes, Vice-President, Dr. H. H. Shoulders, Speaker of the House of Delegates, to succeed himself, and Dr. Olin West, Secretary, to succeed himself. Dr. Frank H. Lahey of Boston, succeeded to the presidency.

The place of meeting for 1944 will be St. Louis, Missouri.

On Dr. James Ewing was conferred the Distinguished Service Award of the American Medical Association for 1941.

WALTER B. MARTIN

JULIAN L. RAWLS

Delegates.

Delegates to Virginia Beach Meeting.

The following have been reported as delegates and alternates from the component named societies to the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8:

<i>Delegate</i>	<i>Alternate</i>
Accomack	
Dr. C. E. Critcher	Dr. J. L. DeCormis
Aibemarle	
Dr. William H. Wood	Dr. Percy Harris
Dr. H. B. Mulholland	Dr. Frank Daniel
	Dr. Edgar W. Kirby, Jr.
Alexandria	
Dr. H. A. Latane	Dr. James W. Love
Alleghany-Bath	
Dr. L. A. Houff	Dr. W. J. Ellis
Dr. S. P. Hileman	Dr. M. B. Jarman
Arlington	
Dr. W. C. Welburn	Dr. J. H. Walton
Augusta	
Dr. Guy R. Fisher	Dr. H. G. Middlekauff
Dr. Kenneth Bradford	Dr. S. H. Garst

<i>Delegate</i>	<i>Alternate</i>
Bedford	
Dr. W. V. Rucker	Dr. W. G. Hardy
Botetourt	
Dr. S. F. Driver	Dr. E. B. Morgan
Charlotte	
Dr. Reginald Bailey	Dr. Thomas Watkins
Culpeper	
Dr. J. L. Stringfellow	Dr. O. K. Burnette
Danville-Pittsylvania	
Dr. I. C. Harrison	Dr. P. W. Miles
Dr. W. J. Wigington	Dr. G. V. Thompson
Dickenson-Buchanan	
Dr. P. Q. Daniel	Dr. A. S. Richardson
Dr. R. L. Phipps	Dr. T. C. Sutherland
Elizabeth City	
Dr. Frank A. Kearney	Dr. Robert H. Wright
Fairfax	
Dr. William Meyer	Dr. William David Chase
Fauquier	
Dr. M. B. Hiden	Dr. Richard Mason
Fourth District and Southside Virginia	
Dr. H. C. Rucker	Dr. J. M. Habel
Dr. F. H. Lukin	Dr. C. G. O'Brien
Dr. W. C. Harman	Dr. F. N. Mallory
Dr. Herbert C. Jones	Dr. D. C. Mayes
Dr. C. E. Martin	Dr. G. M. Naff
Dr. W. D. Kendig	Dr. H. E. Whaley
Dr. W. W. Wilkinson	Dr. W. J. Ozlin
Dr. J. Newton Dunn	Dr. J. A. B. Lowry
Dr. O. H. Whitlock	Dr. Henry M. Snead
Dr. H. C. Alexander	Dr. H. B. Holsinger
Dr. W. M. Phipps	Dr. C. I. Pirkle
Dr. W. W. Seward	Dr. F. E. Steere
Dr. R. B. McEwen	Dr. T. S. Jennings
Fredericksburg	
Dr. John E. Cole	Dr. Frank C. Pratt
Dr. Robt. J. Payne	Dr. J. C. Gordon
Dr. W. A. Harris	Dr. Roderick Dew
Dr. George A. Reynolds	Dr. Rogers N. Harris
Halifax	
Dr. J. D. Hagood	Dr. J. A. Owen
Isle of Wight	
Dr. Rea Parker	Dr. Hugh Warren
James River	
Dr. Garland Dyches	Dr. J. N. Dudley
Dr. E. B. Nuckols	Dr. Nash P. Snead
Dr. J. H. Yeatman	Dr. S. W. Selden
Lee	
Dr. B. C. Grigsby	
Loudoun	
Dr. W. O. Bailey	Dr. G. H. Musgrave
Louisa	
Dr. E. B. Pendleton	Dr. H. S. Daniel
Lynchburg Academy	
Dr. Ernest G. Scott	Dr. E. A. Harper
Dr. Clyde Adkerson	Dr. Powell Dillard

<i>Delegate</i>	<i>Alternate</i>	<i>Delegate</i>	<i>Alternate</i>
Mid-Tidewater			
Dr. Clarence Campbell		Dr. E. H. Terrell	Dr. R. D. Butterworth
Dr. E. L. W. Ferry		Dr. J. K. Hall	Dr. Roshier W. Miller
Dr. W. H. Springall		Dr. J. Lloyd Tabb	
Dr. R. D. Bates		Roanoke Academy	
Dr. U. H. Johnson		Dr. Frank A. Farmer	Dr. L. D. Keyser
Dr. J. R. Gill		Dr. C. H. Peterson	Dr. W. W. S. Butler
Dr. W. P. Jones		Dr. T. D. Armistead	Dr. George Hurt
Dr. J. R. Parker		Dr. S. B. Cary	Dr. Geo. B. Lawson
Nansemond		Rockbridge	
Dr. W. C. Gibson	Dr. J. R. Ellison	Dr. E. V. Brush	Dr. Reid White
Nelson		Rockingham	
Dr. W. M. Tunstall	Dr. J. F. Thaxton	Dr. Charles Watson	Dr. Ernest Miller
Norfolk		Southampton	
Dr. M. S. Fitchett	Dr. Raymond Kimbrough	Dr. James A. Grizzard	Dr. R. L. Raiford
Dr. James W. Anderson	Dr. Foy Vann	Southwestern	
Dr. A. Brownley Hodges	Dr. N. F. Rodman	Dr. H. W. Bachman	Dr. P. S. Smith
Dr. George A. Duncan	Dr. R. L. Payne	Dr. R. D. Campbell	Dr. A. B. Graybeal
Dr. P. St. L. Moncure	Dr. C. J. Andrews	Dr. E. M. Chitwood	Dr. Harloe Bailey
Dr. M. H. Todd	Dr. N. G. Wilson	Dr. B. F. Eckles	
Northampton		Dr. D. S. Divers	Dr. W. I. Owens
Dr. J. Walker Jackson	Dr. H. L. Denoon	Dr. Jas. P. King	Dr. R. H. Grubbs
Patrick-Henry		Dr. J. Glenn Cox	
Dr. W. N. Thompson	Dr. R. H. Walker	Dr. S. A. Tuck	Dr. W. C. Caudill
Dr. C. R. Titus	Dr. A. W. Rucker	Dr. A. B. Woolwine	
Princess Anne		Tazewell	
Dr. Ira Hancock	Dr. H. F. Dormire	Dr. Mary E. Johnston	Dr. Rufus Brittian
Richmond Academy		Warwick	
Dr. W. B. Porter	Dr. A. S. Brinkley	Dr. Paul Hogg	Dr. Harvey G. Bland
Dr. B. R. Tucker	Dr. A. Stephens Graham	Williamsburg-James City	
Dr. Powell Williams	Dr. Turner Shelton	Dr. T. B. Henderson	Dr. J. R. Tucker
Dr. Wyndham B. Blanton	Dr. Guy W. Horsley	Wise	
Dr. C. L. Outland	Dr. Basil Jones	Dr. T. J. Tudor	Dr. J. J. Porter
Dr. T. Dewey Davis	Dr. James P. Baker	Dr. G. W. Botts	Dr. C. H. Henderson

Military and Naval Section

The following have been added to the list of

Examining Physicians on Local Boards

Dr. Charles Canada, East Falls Church.
 Dr. W. Fitzgerald Cavedo, Richmond.
 Dr. W. N. Chinn, Hague.
 Dr. Homer E. Clarke, Lovingsston.
 Dr. Robert B. Crichton, Arlington.
 Dr. V. J. Dardinski, Arlington.
 Dr. H. L. Denoon, Nassawadox.
 Dr. Robert H. Detwiler, Arlington.
 Dr. N. Dillard, Richmond.
 Dr. J. E. Gladstone, Exmore.
 Dr. C. Y. Griffith, Machodox.
 Dr. J. R. Hamilton, Nassawadox.
 Dr. W. P. Hammer, Arlington.
 Dr. J. R. B. Hutchinson, Arlington.
 Dr. R. E. Kelso, Arlington.
 Dr. George W. Leavell, Bristol.

Dr. Blake W. Meador, Richmond.
 Dr. J. R. McGriff, Arlington.
 Dr. Lyddane Miller, Amherst.
 Dr. J. Ed. Payne, Arlington.
 Dr. Thomas M. Peery, Arlington.
 Dr. W. A. Price, Arlington.
 Dr. R. A. Quick, Arlington.
 Dr. Warren Rucker, Fieldale.
 Dr. Leo Solet, Arlington.
 Dr. Emory G. Steinmetz, Arlington.
 Dr. W. J. Sturgis, Sr., Nassawadox.
 Dr. R. N. Sutton, Arlington.
 Dr. James A. Wilkins, Lynchburg.
 Dr. Munford R. Yates, Petersburg.
 Dr. William A. Young, Richmond.

Medical Reserve Officers

In addition to those previously listed in this Journal, the following doctors have been ordered to ex-

tended active duty with the regular army by the commanding general of the Third Corps Area:

Capt. C. W. LaFratta, Richmond—Ft. Belvoir.

Capt. Wilmer H. Paine, Charlottesville—Ft. Bragg, N. C.

Lt. Charles L. Beavers, Franklin—Camp Grant, Ill.

Lt. J. R. T. Carmichael, Charlottesville—Ft. Geo. G. Meade, Md.

Lt. Harris S. Holmboe, Charlottesville—Camp Lee.

Lt. Fred D. Large, Clairton—Camp Lee.

Lt. F. E. Oglesby, Oceana—Camp Lee.

Lt. Hunter H. Romaine, Petersburg—Camp Lee.

Lt. Robert J. Scott, Onancock—Camp Grant, Ill.

Naval Medical Reserve Officers

Lt. (jg) William A. Johns, Richmond.

Lt. (jg) Grover L. Moore, Portsmouth.

Orders Revoked

Capt. L. P. Jones, Emporia.

Lt. C. C. Canada, Arlington.

Lt. Washington C. Winn, Richmond.

Lt. Ira C. Evans, class of '38, Medical College of Virginia, is now stationed at Camp Claiborne, La.

Lt. W. G. Lewis, class of '38, Medical College of Virginia, is now stationed at Camp Blanding, Fla.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN W. HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

PROGRAM

Nineteenth Annual Meeting

Virginia Beach October 6-7-8, 1941

Headquarters: Cavalier Hotel

A cordial invitation to attend the meetings and entertainments is extended to every women attending the Convention.

Registration begins on the afternoon preceding the opening meeting, and each woman is requested to register promptly upon arrival, either as delegate or visitor. (Registration fee—25 cents.)

REGISTRATION BOOTH open Monday October 6, at 5:00 P. M. and from 7:30 to 9:30 P. M.

CHAIRMEN OF REGISTRATION—Mrs. Franklin D. Wilson and Mrs. George Renn.

CONVENTION CHAIRMAN—Mrs. H. W. Rogers.

CHAIRMEN OF LOCAL ARRANGEMENTS—Mrs. Millard B. Savage and Mrs. A. G. Horton.

EXHIBIT BOOTH—Mrs. C. J. Devine, Convention Chairman.

Mrs. O. R. Fletcher, State Chairman.

Tuesday, October 7th

8:00 A. M.—Registration Booth open. Cavalier Hotel.

8:45 A. M.—Pre-Convention Board Meeting and Breakfast—Small Dining Room Porch.

All Local Presidents, Presidents-Elect (or Vice-President where there is no President-Elect), State Officers and Chairmen are expected to attend this meeting.

General Annual Meeting

10:00 A. M.—Cavalier Hotel, the Hunt Room.

(Open to all women attending the Convention.)

Mrs. Griffin W. Holland, Eastville, President, presiding.

Invocation—Mrs. M. N. King, Norfolk.

Address of Welcome—Mrs. Albert G. Horton, Norfolk.

Response—Mrs. J. L. DeCormis, Accomac.

Report of Committee on Arrangements—Mrs. M. B. Savage, Chairman.

Report of Committee on Registration and Credentials—Mrs. Franklin D. Wilson, Chairman.

In Memoriam—Mrs. Southgate Leigh.

Minutes Eighteenth Annual Convention.

Minutes Post-Convention Board Meeting.

Minutes Mid-Winter Board Meeting.

Roll Call of Local Auxiliaries—Mrs. H. W. Potter, Recording Secretary.

President's Message—Mrs. Griffin W. Holland.

President's Announcements.

Reports—

Corresponding Secretary

Treasurer

Organization

Program and Health

Finance

Public Relations

Hygeia

Revisions

Press and Publicity

History, Archives and Research

Exhibit

Jane Todd Crawford Memorial

Leigh-Hodges-Wright Memorial
Cancer Control
Legislation
Membership
Bulletin
Parliamentarian

Reports of Local Presidents—

Auxiliary to Alexandria Medical Society—Mrs. C. E. Arnette, President.
Auxiliary to Accomac-Norhampton Medical Societies—Mrs. J. L. DeCormis, President.
Auxiliary to Lynchburg Academy of Medicine—Mrs. S. E. Oglesby, President.
Auxiliary to Mid-Tidewater Medical Society—Mrs. Hawes Campbell, President.
Auxiliary to Norfolk Medical Society—Mrs. A. G. Horton, President.
Auxiliary to Petersburg Unit of Fourth District Medical Society—Mrs. E. L. McGill, President.
Auxiliary to Richmond Academy of Medicine—Mrs. Edward H. Williams, President.
Auxiliary to Williamsburg-James City County Medical Society—Mrs. C. E. Holderby, President.
Auxiliary to Warwick County Medical Society—Mrs. F. N. Thompson, President.
Auxiliary to Loudoun-Fauquier Medical Society—Mrs. Henry Townsend, President.

Delegates—

Woman's Auxiliary to A. M. A. Meeting—Mrs. E. Latane Flanagan.
Woman's Auxiliary to Southern Medical Association—

Unfinished Business.

New Business.

Recommendations from the Board.

Presentation of Membership Trophy—Mrs. Franklin D. Wilson.

Acceptance of Trophy—

Reports—

Committee on Resolutions—
Nominating Committee—Mrs. H. A. Latane, Chairman.

Election of Officers.

Installation of Officers—Mrs. James B. Stone.
Presentation of Gavel.

Adjournment.

Luncheon Meeting

1:30 P. M.—“Auxiliary Day” Luncheon (Subscription)—Large Dining Room Porch.

Invocation—Rev. Walter C. Gum, D.D., Norfolk.

Greetings—

Dr. W. B. Martin
Dr. R. W. Miller
Dr. S. K. Ames

Inaugural Address of President—Mrs. E. Latane Flanagan, Richmond.

Guest Speaker—Mrs. R. E. Mosiman, Seattle, Wash., President, Woman's Auxiliary to A.M.A.

4:00 to 5:00 P. M. Tuesday Afternoon—Woman's Auxiliary to the Norfolk County Medical Society will be Hostess to Guests of the Convention at a Tea at the Cavalier Hotel. All members are cordially invited.

6:00 to 7:00 P. M.—Cocktail Party—Hunt Room.

Wednesday, October 7th

10:30 A. M.—Drive to many points of interest near Virginia Beach.

(All visiting ladies invited.)

7:00 P. M.—Dinner and Floor Show followed by Dancing.

Dancing every evening in Ballroom of Hotel from 9:30 to 1:00 A. M.

“Bring Your Husband”.

Sometimes our husbands take us, sometimes we take them. Often, all they need is a little encouragement to do something they really want to do themselves, but can't make up their minds.

Convention time at Virginia Beach is fast approaching and we wives must start “encouraging” early.

First, let me “encourage” you to come by telling you that Virginia Beach, in October, is a grand place to be. The Woman's Auxiliary to the Norfolk County Medical Society and the Virginia Beach doctor's wives are expecting you and a warm welcome awaits you.

So, pretty soon, when the subject comes up and *your* doctor seems a little doubtful about going, use a little psychology. Tell him he needs to “rub shoulders” with the other fellow; he needs a vacation before the long, hard winter months of work set in. Go over the program with him and try to get him interested in some of the papers which might be of interest and helpful to him, and then tell him that you, yourself, want to go.

Here's hoping to meet you there, you and *your* doctor!

R. WILSON, (Mrs. F. D.),
Publicity Chairman, Woman's Auxiliary,
Norfolk County Medical Society.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.

Editor

AGNES V. EDWARDS

Business Manager

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H. S. DANIEL, M. D., Louisa

All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, \$2.00. Single Copies, 25c.

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SEPTEMBER, 1941.

No. 9

Editorial

The Residency

SINCE the idea of the residency was introduced at the Johns Hopkins Hospital in 1889, an enormous expansion of the plan has been witnessed in American hospitals. Last year there were 587 hospitals in the United States employing 5,118 residents. No one questions the value of the new system: the residents do not, because they realize that for the future it is the only avenue leading to a specialty, and specialization is attracting an increasing proportion of medical graduates; and the hospitals do not, because with maturer, better trained and more serious-minded doctors on duty, they are sure their patients receive better care. Many hospitals, however, are having difficulty meeting the requirements of the new system, difficulty in finding the means to finance it, difficulty in shifting to the shoulders of an already overburdened clinical staff the necessary additional educational responsibilities.

The internship is for one or two years at the most. The residency is for three years. The internship is an undergraduate discipline, demanding strict supervision and following a rather rigid pattern. The residency is a graduate discipline with the freedom of action and enlarged responsibility that a more advanced position naturally confers. The intern is not remunerated. The resident is. The intern enters a hospital with one of two purposes in mind; either to finish his work and begin practice as a general practitioner, or to make it a stepping stone to a residency and the specialty to which he ultimately aspires.

After 1942 the Advisory Board for Medical Specialties intends to require of a resident "a period of study after the internship of not less than three years in clinic, dispensary, hospitals or laboratories." In their requirements much emphasis is laid on familiarity with the basic sciences, and unless a man is interested in these foundations of the specialty which he hopes to attain he had better give it up. He must go into the anatomical, physiological, pathological or chemical laboratory and pursue his subject with zest and thoroughness. Whether he does this in "a block period" or combines such studies with clinical responsibilities under "a distributed plan" matters little. To be a specialist in the future, a doctor must be a scientist.

It goes without saying that the duties of the resident include the care of patients, the instruction of interns, medical students and nurses. Above all they imply a consciousness that the chief object of his three-year sojourn in a hospital is a progressive expansion of his own clinical experience and responsi-

bility, the acquisition of special knowledge and of methods of acquiring such knowledge so ingrained that they become not transient, but lifelong, habits.

Whether a resident has aptitude for, and carries out, original research is not of primary importance, but the opportunity for it should be at his hand. In fact, hospitals should have university connections that will enable them to recognize and reward the author of an acceptable thesis based on sound research, with an appropriate postgraduate degree.

Grave responsibility rests upon the hospital which offers residences to young men preparing themselves for specialties. This responsibility begins with the careful choice of the resident and continues with a conscientious effort to assure him adequate laboratory facilities, abundant clinical material, an approved number of interns to share his work and a clinical staff headed up by men imbued with the scientific spirit and a flare for teaching. It cannot be too frequently emphasized that the residency is primarily graduate education. Whether there are enough leaders in medicine qualified to lift such teaching above the plane of undergraduate instruction remains to be seen.

Every intern looking forward to an appointment as a resident, and every hospital accepting applicants for the residency should ponder the qualifications considered necessary for the resident in the 1940 report of the Commission on Graduate Medical Education:

1. Broad cultural and educational background.
2. Good scholastic record in college and medical school.
3. Genuine ability and real eagerness to acquire medical knowledge.
4. Completion of an approved general internship during which he demonstrates energy, originality, tact and self-control and better than average mental capacity.
5. Real interest in the specialty of his choice and promise of making worth-while contributions to its advancement.
6. Willingness to make personal sacrifices to acquire a well-rounded training for his specialty.
7. Demonstrated interest in the patient as an individual and not as simply another case.
8. Integrity, strength of character and a discriminating sense of ethical values.

The Psychiatric Service of the Medical College of Virginia

THERE has just been opened on the seventh floor of the new Medical College of Virginia Hospital a psychiatric service for private and ward patients with a total capacity of thirty-eight beds. Facilities for hydrotherapy, a ward laboratory, a conference room, rooms for occupational therapy, and a new type of safety window screen feature the equipment. The neuropsychiatric staff includes the professor and assistant professor of the college, a resident, rotating intern, graduate nurses and social worker. Thus, for the first time, Richmond will undertake what is already being carried out successfully at the University of Virginia. This increase in general hospital facilities for mental patients has a distinct value for the whole state. Psychiatric illnesses, too advanced for ambulatory treatment, are often responsive to early intensive treatment in a general hospital, and in such a hospital many patients who would otherwise have to be admitted eventually to state mental hospitals for long residences can be rather quickly rehabilitated.

There is in the public mind an undeserved stigma attached to mental illness which probably owes its origin to the mediaeval conception that such illness was a sign of the devil's possession of the soul. Modern knowledge has removed this ancient belief, but a feeling of shame in regard to it still exists in some quarters. Because of it relatives sometimes try to keep mentally ill patients at home and often it is not until the period of curability is long passed that they are willing for them to be hospitalized. There should not be any objection on the part of families to sending their mental patients to a general hospital. A two-fold advantage should result: proper facilities will be made available to patients early in the course of their illness, and there will come a gradual realization on the part of the general public that there is nothing disgraceful about mental illness.

The new medical college hospital service represents an important trend in medical teaching. Until very recently instruction in psychiatry in our medical colleges consisted of a series of didactic lectures on the chronic form of mental illness and the demonstration of patients with advanced mental disturbance. In consequence of this, the medical student has been prone to look askance upon psychiatry, and the young graduate, when he went into practice, has tended to shun psychiatric problems entirely. He has realized, when thrown upon his own resources, that the type of psychiatric treatment with which he was made familiar had overlooked entirely that large group of persons with mental disturbances of a less severe nature. He has not felt equipped to deal with them. The new psychiatric service at the Medical College of Virginia will lay emphasis upon situations met commonly in practice rather than upon less frequent chronic types of mental illness.

The training of nurses, interns and residents as well as students will be as important a function of this service at the Medical College as the care of patients committed to it. Patients will be treated as individuals, subject to a variety of moods, an understanding of which will throw light upon the complicated interrelations of the physical and emotional features of sick persons in general. With such a set-up as this service presents, coordinated research between psychiatry and the other specialties should get under way immediately. In a general hospital such as the Medical College Hospital, with the various specialties necessarily working in close contact with each other, a broad approach to any problem is guaranteed. It is apparent that not only will psychiatry profit from such collaboration but that psychiatry in turn may be able to throw light upon many problems that now face general medicine and the other specialties.

A New Disease

WITH reason the National Committee for the Extension of Medical Service warns the profession of a new disease which has been called "War Fever". The Committee believes the future effectiveness of American medicine and the future status of the American doctor will be determined by the extent to which the individual physician is successful in immunizing himself against the accompanying hysteria which instigates unwise activities and impractical innovations.

The Committee realizes that the present crisis is not so much a war for material advantages and territorial gains as for ideological conquest, that it will sacrifice lives and material resources of this country before it is won, and that it will demand an all-out aid from the American physician. It realizes that the greatest danger resulting from the emergency period lies in the loss of independence and freedom of action—the priceless heritage of the American people. It believes that it is medicine's sternest task to hold fast that which is good, to see that the stifling control of bureaucracy is not permanently established, to insure the preservation of the sacred doctor-patient relationship, the independence of physicians, the continued progress of American medicine and the safeguarding of the public interest in matters medical.

The National Physicians' Committee for the Extension of Medical Service is medicine's planning and administrative agency in the field of public relations. It has already demonstrated its effectiveness. In times of increasing stress it should have the allegiance and financial support of every patriotic practicing physician.

Proceedings of Societies

Virginia State Board of Medical Examiners.

The following doctors were granted certificates to practice medicine in Virginia, at the June meeting of the Board:

Dr. Oris Aaron, Raven.

Dr. Charles Francis Adams, Washington, D. C.

Dr. Ernest Beverly Agee, Jr., Cincinnati, Ohio.

Dr. Herbert Clifton Allen, Philadelphia, Pa.

Dr. George Clayton Armistead, Jr., Roanoke.

Dr. Charles Francis Baldini, Jr., Union City, N. J.

Dr. James Britton Bain, Portsmouth.

Dr. William O. Bailey, Leesburg.

Dr. William Henry Bandy, Winston-Salem, N. C.

Dr. Melvin Gillette Baynard, Norfolk.
 Dr. Eneanor Hedrick Beamer, Boston, Mass.
 Dr. Bradford Sherwood Bennett, Syracuse, N. Y.
 Dr. Benjamin Walter Berner, University.
 Dr. James Franklin Blades, Richmond.
 Dr. James Motley Booker, Lottsburg.
 Dr. John Otto Boyd, Jr., Detroit, Mich.
 Dr. Luther Clifton Brawner, Richmond.
 Dr. William Edward Bray, Jr., Charlottesville.
 Dr. Frank Neville Buck, Jr., Richmond.
 Dr. Walter Buckner, II, Roanoke.
 Dr. Walter Humphrey Buffey, Elizabeth, N. J.
 Dr. Estill Leftrage Caudill, Jr., Chattanooga, Tenn.
 Dr. Henry R. C. Chalmers, Fort Worth, Texas.
 Dr. Irving Chofnas, Roxbury, Mass.
 Dr. Fred Edward Cleveland, Jr., Seattle, Wash.
 Dr. Thomas Felix Coates, Jr., Richmond.
 Dr. John Gordon Coleman, University.
 Dr. Pete Commings, Washington, D. C.
 Dr. Herschell Marcus Cooke, Richmond.
 Dr. Robert Lawrence Corbill, Norwalk, Conn.
 Dr. John Lee Couper, Lexington.
 Dr. Robert Battey Crichton, Arlington.
 Dr. Clara Lyman Day, New Haven, Conn.
 Dr. William Robert Dandridge, University.
 Dr. William Etzler Daner, Richmond.
 Dr. Hermann Diamant, Norfolk.
 Dr. Marina Diez-Rivas, Richmond.
 Dr. Fletcher Ishmael Dorsett, Winston-Salem, N. C.
 Dr. Charles Ross Duncan, Radford.
 Dr. Edward Thomas Dunn, Jr., Clifton Forge.
 Dr. Frank George Elliott, Jr., Washington, D. C.
 Dr. Edward Gill Face, Jr., Ontario, Canada.
 Dr. Robert Sears Faircloth, Little Rock, Ark.
 Dr. Burton E. Field, Norfolk.
 Dr. Charles J. Frankel, University.
 Dr. Margarita Fuertes-Correa, Washington, D. C.
 Dr. Patrick Henry Fusco, Roanoke.
 Dr. Mary Virginia Gallagher, Charleston, W. Va.
 Dr. Herbert Gershberg, Brooklyn, N. Y.
 Dr. James Thomas Gianoulis, Richmond.
 Dr. Robert Harrison Giles, Jr., Roanoke.
 Dr. George Everard Godman, Jerryville, W. Va.
 Dr. Arthur Broadus Gravatt, Ellerson.
 Dr. James Cornelius Gray, St. Louis, Mo.
 Dr. James Hill Gressette, Roanoke.
 Dr. George Parker Hand, Jr., Norfolk.
 Dr. Merriman Hamblin, Amonate.
 Dr. George Anderson Hardie, Auburn, Ala.
 Dr. Elinor Beatrice Harvey, Arlington.
 Dr. William Smith Hawkins, Minneapolis, Minn.
 Dr. Harry James Haynes, Washington, D. C.
 Dr. Hollen Garber Helbert, Harrisonburg.
 Dr. Willis Merriman Hendricks, Roanoke.
 Dr. Alvah Livingston Herring, Jr., Richmond.
 Dr. Norris Foster Hines, Huntington, W. Va.
 Dr. Kurt Hirsch, Norfolk.
 Dr. Erwin L. Hirsley, Raven.
 Dr. Saul Holtzman, Washington, D. C.

Dr. Julius Charles Hulcher, Richmond.
 Dr. Cary Frederick Irons, Jr., Richmond.
 Dr. Malene Grant Irons, Richmond.
 Dr. John Tallman Jarrett, Richmond.
 Dr. Daniel Cornell Jones, Nashville, Tenn.
 Dr. Marcellus A. Johnson, III, Roanoke.
 Dr. William Russell Jones, Jr., Richmond.
 Dr. Adolf Ludwig Kappus, New York, N. Y.
 Dr. Otto Kastenbaum, Norfolk.
 Dr. Charles Briel Keppler, Richmond.
 Dr. Tom Cobb King, Jr., Cleveland, Ohio.
 Dr. George Henry Kinser, Waynesboro.
 Dr. Arthur Abbit Kirk, Washington, D. C.
 Dr. Abraham Lewis Kolodny, Norfolk.
 Dr. Newton Wheeler Larkum, Charlottesville.
 Dr. Herbert Carl Lee, Richmond.
 Dr. Lorenzo Foster Luckie, Staunton.
 Dr. Sidney Lyons, Richmond.
 Dr. Robert C. Manchester, Alexandria.
 Dr. Edith Katherine Mangone, New York, N. Y.
 Dr. Lewis Edward Mangus, Vesuvius.
 Dr. Hans Louis J. Mannheim, New York, N. Y.
 Dr. Jerome David Markam, Long Island, N. Y.
 Dr. Donald Forbes Marshall, Norfolk.
 Dr. Elizabeth Martin, Raleigh, N. C.
 Dr. Edward Toshio Matsuoka, Eloise, Mich.
 Dr. John Jerry Marsella, Jersey City, N. J.
 Dr. Lester Hillard Mason, Charleston, W. Va.
 Dr. Edward Craig Mazique, Washington, D. C.
 Dr. Howard M. McCue, Jr., Madison, Wis.
 Dr. Carolyn Moore McCue, Madison, Wis.
 Dr. Samuel Marshall McDaniel, Jr., Durham, N. C.
 Dr. Percy John McElrath, Bramwell, W. Va.
 Dr. Kelly Wilson McKee, Bristol.
 Dr. Donald Shonk Morris, Richmond.
 Dr. John Richard Morris, Jr., Rochester, N. Y.
 Dr. Lloyd Fick Moss, Richmond.
 Dr. James Mercer Moss, Arlington.
 Dr. Edward Eugene Mullen, Norfolk.
 Dr. James Spicer Murray, Jr., Baltimore, Md.
 Dr. Maurice Raymond Nance, Bryn Mawr, Pa.
 Dr. Leland Ray O'Brian, Jr., Lynchburg.
 Dr. David William O'Brien, Waynesboro.
 Dr. Thomas Paul O'Brien, Richmond.
 Dr. John O'Donoghue, Washington, D. C.
 Dr. Edward Seymour Orzac, Wilkes-Barre, Pa.
 Dr. Wililam Gordon Page, Richmond.
 Dr. Maysville Owens Page, Richmond.
 Dr. George Benedict Pantera, Richlands.
 Dr. George Earl Peace, Norfolk.
 Dr. William Lowndes Peple, Jr., Baltimore, Md.
 Dr. William Henry Pettus, Jr., Montcoal, W. Va.
 Dr. Albert Piket, Charleston, W. Va.
 Dr. Joseph Lawson Platt, University.
 Dr. John Fairman Preston, Jr., Blacksburg.
 Dr. Lee Albert Rademaker, Salisbury, Md.
 Dr. Fletcher Lindsay Raiford, Norfolk.
 Dr. Wade Herbert Rardin, Huntington, W. Va.
 Dr. William Frederick Richmond, Huntington, W. Va.

Dr. Charles Warner Robertson, Alberta.
 Dr. Everett James Robertson, Washington, D. C.
 Dr. Rowland Hatton Robertson, Jr., Roanoke.
 Dr. William Woodrow Ross, Newport News.
 Dr. George Sterling Row, Richmond.
 Dr. Thomas McCreery Sawyers, Seattle, Wash.
 Dr. Joseph Schechner, Norfolk.
 Dr. Walter Schiff, Marion.
 Dr. Charles D. Schilling, Charlottesville.
 Dr. Herbert Hermann Schoenfeld, Washington, D. C.
 Dr. Edwin Webster Shearburn, Charlottesville.
 Dr. Philip Laub Shultz, University.
 Dr. Aubrey Lawrence Shelton, Norfolk.
 Dr. Cecil L. Sinclair, Hampton.
 Dr. Cecil Cullen Smith, Catawba.
 Dr. Alexander Erskine Sproul, Baltimore, Md.
 Dr. John Edgar Stevens, Jr., Richmond.
 Dr. Spotswood Douglas Stoddard, Richmond.
 Dr. Carey Addison Stone, Jr., University.
 Dr. Douglas Best Stratton, Roanoke.
 Dr. Hugh Leander Sulfridge, Jr., Charlottesville.
 Dr. John B. Sullivan, Buckingham.
 Dr. Adney Kemple Sutphin, University.
 Dr. Robert Hay Taylor, Richmond.
 Dr. James Frederick Thackston, St. Charles.
 Dr. Myrtle Marie Thomas, New York, N. Y.
 Dr. William Preston Tice, Fairfield, Ala.
 Dr. John Mackey Trapnell, Jr., Atlanta, Ga.
 Dr. Philip Cocke Trout, Roanoke.
 Dr. Allan Bevier Warren, Jr., Baltimore, Md.
 Dr. Luther Bradford Waters, Jr., Norfolk.
 Dr. William Rush Whitman, Jr., Atlanta, Ga.
 Dr. Julian Andrews White, Norfolk.
 Dr. Philip Cary Whitehead, Chatham.
 Dr. John Stuart Williams, Baltimore, Md.
 Dr. Armistead Dandridge Williams, Richmond.
 Dr. Betty Willis, Culpeper.
 Dr. William Robert Woolner, Richmond.
 Dr. Harold Taylor Yates, Charlottesville.
 Dr. Daniel Yuter, Charlottesville.
 Dr. Abraham Zies, New York, N. Y.

Fourth District and Southside Virginia Medical Society.

The regular meeting of this Society was held at the Central State Hospital, Petersburg, on August 5, under the presidency of Dr. J. B. Kiser of Emporia. The following program was presented: Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis (Moving Picture Demonstration) by the Virginia Tuberculosis Association; *Trichomonas Vaginalis* by Dr. W. M. Bowman, Petersburg; Experience with the Accident Work in the Building of Camp Lee by Dr. H. C. Jones, Petersburg; Fibrositis by Dr. L. L. Clark, Chester; Chronic Heart Failure and Its Management by Dr. Douglas Chapman, Richmond; Deltoid Bursitis by Dr. K. S. Freeman, Kenbridge; Adult Blue Baby by Dr. R. H. Manson, McKenney; and Hog Cholera in Humans by Dr. G. S. Fultz, Butterworth. The members and visitors were then guests of the Staff of the Hospital at a dinner.

Dr. C. E. Martin, Emporia, is secretary-treasurer of this Society.

Augusta County Medical Association.

At the annual meeting, held on August 6, the following officers were elected: President, Dr. H. B. Webb, Waynesboro; vice-presidents, Drs. James B. Pettis, Staunton, H. J. Morton, Stuarts Draft, and L. C. Brown, Staunton; treasurer, Dr. J. E. Womack, Staunton; and secretary, Dr. J. H. Thomas, Greenville. Delegates to the Medical Society of Virginia were also named at this time.

Halifax County Medical Society.

At the annual meeting of this Society held recently, Dr. L. P. Bailey of Nathalie was elected president, and Dr. Wm. C. Brann of South Boston was re-elected secretary-treasurer.

News Notes

The Virginia Beach Meeting.

In about a month, the interest of many doctors will be centered on Virginia Beach, for it is there that the next annual meeting of the Medical Society of Virginia is to be held on October 6, 7 and 8. An ideal place for a meeting in October, Virginia Beach may be reached by motor, rail, boat, bus, or air.

The Cavalier is headquarters for the meeting.

Their convention rates are \$8.00 per person daily for double room with private bath, and \$9.00 for a single room. The Princess Anne County Club and Gay Manor Hotel are two of the first class hotels which will also be open at this time. Rates for all were given in the May MONTHLY. Reservations should be made now if this has not already had attention. Special privileges are allowed by the

Cavalier to guests at that hotel, one of these being no additional charge for the banquet on the last evening which will otherwise be \$2.50.

An excellent program (which appears elsewhere in this issue) includes four guests—Dr. Louis Hamman who will have a clinical pathological conference on the 7th, and Colonel Norman T. Kirk, M. C., Medical Officer in charge of the Walter Reed Hospital, who will speak that afternoon. On Wednesday, Dr. James R. Miller, prominent obstetrician of Hartford, Conn., will be the principal speaker in the morning, and Dr. Henry W. Cave, assistant clinical professor of surgery at Columbia University, (P. & S.), in the afternoon. Panel discussions will be held that afternoon.

Throughout the convention, special groups will have meetings, luncheons and dinners.

Commercial and scientific exhibits will be top-notch this year. A new feature will be the hobby exhibits which should attract much interest.

Social features include informal dancing every evening, a cocktail party on Tuesday afternoon, and a banquet and floor show on the closing evening.

There will be a golf tournament, tennis tournament, swimming in the indoor pool of the Cavalier, horse-back riding, and innumerable other pleasures to be enjoyed at this season.

Dr. George A. Duncan, Wainwright Building, Norfolk, is general chairman and has an excellent committee assisting him.

Make your plans to attend! You won't regret it!

Tennis Tournament.

Plans are being made for a tennis tournament to be held during the meeting of the State Society. Matches will be played on Sunday, October 5, and on Monday, October 6, and a prize will be awarded.

Members interested in playing tennis are requested to notify the Society's office, or Dr. B. E. Harrell, chairman of tennis, Medical Arts Building, Norfolk, at least ten days before the meeting.

The Virginia Radiological Society

Will have a dinner meeting on Tuesday, October the 6th, which will be followed by a round table discussion to which are invited all members and guests of the State Society. Subject of the discussion will be "Miller-Abbott Intubation Treatment for Intestinal Obstruction", with Dr. W. Osler Abbott of Philadelphia as chairman. Dr. George W. Chamberlin of Reading will be co-chairman and discuss

the radiological aspects of the problem.

The Navy Needs More Doctors.

The Navy has been greatly expanded over its pre-war peace time size. In 1939 there were less than 100,000 men in the Navy; recently Congress has authorized a Navy personnel of over 350,000 men, not counting the approximately 50,000 men of the Marine Corps. The Medical Corps of the Navy has the duty to care for the health of this personnel. As a consequence of the increase in the number of men, more doctors are required. The period of emergency was started with 850 doctors, but three times that number or more are now needed.

The Navy personnel, including medical officers, is enrolled through voluntary application, selective service not applying to the Navy. To the present time a very satisfactory response has been made by doctors who have joined the U. S. Naval Reserve and volunteered for active duty, but the need for more volunteers now presents itself.

The Fifth Naval District, composed of Virginia, West Virginia, Maryland and the seaboard counties of North Carolina, is short about sixty medical officers. There are vacancies for that number now existing, especially for young medical men under thirty-five years of age, although doctors up to the age of fifty are eligible for a few vacancies. Any doctor who desires more detailed information will be furnished it by writing to The District Medical Officer, Naval Operating Base, Norfolk, Virginia.

The Southwestern Virginia Medical Society

Will hold its annual fall meeting in Roanoke on September the 24th at the Hotel Roanoke. Members of the Society from Roanoke will give the afternoon program and during the evening session, Dr. T. K. McKee, Saltville, will deliver the president's address. Several outstanding physicians in the Southwest area will complete the evening session with fifteen-minute talks, which will be open for general discussion. A social hour will be held at the Hotel Roanoke.

Dr. D. B. Stuart of Roanoke is chairman of the program committee and Dr. W. L. Powell, Roanoke, chairman of the committee on arrangements. Dr. T. K. McKee, Saltville, is president of the Society, Dr. W. C. Caudill, Pearisburg, vice-president, and Dr. James P. King, Radford, secretary-treasurer.

The Symposium on Industrial Health,

Sponsored by the Medical College of Virginia, the Committee on Industrial Health of the Medical Society of Virginia, Bureau of Industrial Hygiene of the State Department of Health, and the Richmond Academy of Medicine, will be held on September 11 and 12. All meetings will be held in the Simon Baruch Auditorium in the Egyptian Building of the Medical College of Virginia, Richmond. On the morning of the 11th, there will be a Symposium on Industrial Health with Dr. William H. Higgins, Richmond, presiding, and the following assisting: Dr. Walter B. Martin, Norfolk; Dr. J. B. Porterfield, Richmond; Dr. E. C. Harper, Richmond; Dr. Russel R. Jones, Pittsburgh; Dr. W. J. McConnell, New York; and Dr. Louis Schwartz, Bethesda, Md.

The afternoon session will be on Industrial Ophthalmology, with Dr. R. H. Courtney, Richmond, presiding. Those participating are Drs. Harry B. Stone, Roanoke; George H. Cross, Chester, Pa.; Rudolph C. Thomason, Richmond; and C. N. Scott, Nitro, W. Va.

In the evening, the program will be especially for managers in industry and will be presided over by Dr. Fred J. Wampler, Richmond, with Drs. D. Frank Milam, Chapel Hill, N. C., and Edward J. Stieglitz, Bethesda, Md., participating.

Dr. T. Dewey Davis, Richmond, will preside at the first session on the 12th. The following will present papers: Dr. John H. Foulger, Wilmington, Del.; Dr. T. Lyle Hazlett, Pittsburgh; Dr. H. Page Mauck, Richmond; and Dr. Murray B. Ferderber, Pittsburgh.

At the afternoon session, Dr. I. A. Bigger, Richmond, will preside, and Professor Donald E. Cummings, University of Colorado, Denver, will speak. Papers on hand injuries will be presented by Drs. Thomas Beath, Richmond; Henry C. Marble, Boston; and Sumner L. Koch, Chicago.

Programs have been mailed to the doctors of the state as well as others interested in industrial medicine and members of the profession are invited to attend. There will be no registration fee and you should not miss this excellent program by specialists in their fields.

Married.

Dr. William Thomas Pugh, Lynchburg, and Miss Frances Kendig, Kenbridge, August 16. Dr. Pugh is a graduate of the Medical College of Virginia.

Dr. Theodore McCord, Fairfax, and Miss Elizabeth Funk, Middletown, July 19.

Dr. Don Preston Peters, Jr., Lynchburg, and Miss Betty Sowards, Lexington, Ky., August 6. Dr. Peters is a graduate in medicine of the University of Virginia in 1940.

American Board of Obstetrics and Gynecology.

The next written examination and review of case histories (Part I) for Group B candidates will be held on January 3, 1942. Applications for admission to these examinations must be on file in the secretary's office not later than October 1, 1941. Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations, applications for which must be in by March 1, 1942.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

Out-Patient Clinics of the State Hospital Board.

Dr. Joseph E. Barrett, clinical director at the Southwestern State Hospital, has been appointed to direct the out-patient program of the State Hospital Board. He will continue the six clinics in operation in the southwestern part of the state and expand the program to other sections as physicians and social workers become available. It has long been the plan of the Board to have a statewide system of out-patient clinics and this appointment will bring them one step nearer that realization.

Committeemen of Petersburg Lions Club.

Dr. Francis N. Taylor has been appointed chairman of the Health and Welfare Committee and also a member of the Program Committee of this Club for the coming year. Dr. Meade C. Edmunds has been named a member of the Sight Conservation Committee.

Dr. DeWitt C. Daughtry,

Class of '39, Medical College of Virginia, who has been at Receiving Hospital, Detroit, is now at Alexander Blaine Hospital, that city.

The Physicians Casualty Association of America,

One of our advertisers announces a reduction in the \$25.00 per week accident and health insurance of \$1.00 per year; in the \$50.00 per week of \$2.00

per year; and in the \$75.00 per week of \$3.00 per year.

Dr. William Herbert McCall

Class of '38, Medical College of Virginia, announces the opening of offices in the New Medical Building, Asheville, N. C., his practice being limited to ophthalmology and otorhinology. He has recently completed a residency at the Medical College of Virginia.

Civil Service Examinations.

The U. S. Civil Service Commission announces open competitive examinations for the Junior Medical Officer (Rotating Internship) and Junior Medical Officer (Psychiatric Resident). The examinations will be open until November 15, 1941. Both of these positions pay a salary of \$2,000.00 a year. Necessary application forms may be received from the Secretary, Board of United States Civil Service Examiners, at any first- or second-class post office.

The American Public Health Association

Has announced the eighth Institute of Public Health Education to be held in Atlantic City, October 12-14, immediately preceding their Annual Meeting. This Institute offers those interested in the field of health education the opportunity to enroll for a short, intensive course in the philosophy, principles and methods of educating the public for health.

Further information may be obtained from Reginald M. Atwater, M. D., Executive Secretary, 1790 Broadway, New York City.

Drs. Jacob and Josephine Flax.

Dr. H. Jacob Flax, class of '40, Medical College of Virginia, is now serving as junior resident in surgery at the Bayamon District Hospital in Bayamon, Puerto Rico. His wife, the former Dr. Josephine Guarch, also of the same class, Medical College of Virginia, is junior resident in obstetrics and gynecology at the same hospital. This hospital is one of the all-charity hospitals under the control of the Public Health Commission and a third one is to be opened shortly at Arecibo where Dr. Jacob Flax has been permanently assigned until July, 1942.

Dr. James McCaw Tompkins,

Richmond, was recently appointed by Governor Price as a member of the Board of Visitors of the Medical College of Virginia, succeeding the late W. H. Ellerson. Mr. Hugh Leach succeeds the late C. P.

Cardwell. Both appointments are for life.

The New York Academy of Medicine

Will hold its annual Graduate Fortnight, October 13 to 24, the subject being "Cardiovascular Diseases Including Hypertension". There will be panel discussions, hospital clinics, addresses by well-known physicians, scientific exhibits and demonstrations. Registration is limited to the medical profession and those interested may communicate with the New York Academy of Medicine, 2 East 103rd Street, New York.

American College of Surgeons.

The thirty-first annual Clinical Congress of the College will be held in Boston, November 3 to 7, with headquarters at the Statler and Copley-Plaza Hotels. The twenty-fourth annual Hospital Standardization Conference sponsored by the College will be held concurrently. About five thousand surgeons and hospital executives from all parts of the western hemisphere are expected for these meetings, the program for which will include clinics and demonstrations in local hospitals and medical schools, as well as scientific sessions, conferences, medical motion picture showings and exhibits in the headquarters hotels.

The Chairman of the Board of Regents of the American College of Surgeons is Dr. Irvin Abell of Louisville and the President is Dr. Evarts A. Graham of St. Louis. The President-Elect is Dr. W. Edward Gallie of Toronto, who will be inaugurated at the presidential meeting and convocation to be held the evening of November 3 in Symphony Hall, when several hundred initiates will be received into the fellowship of the College. In charge of local arrangements for the Clinical Congress is a committee of Boston surgeons headed by Dr. Leland S. McKittrick, Chairman, and Dr. Richard H. Sweet, Secretary.

Headquarters of the American College of Surgeons, which has a fellowship of more than 13,000 surgeons, are at 40 East Erie Street in Chicago. The associate directors are Dr. Bowman C. Crowell, who heads the Department of Clinical Research, and Dr. Malcolm T. MacEachern, Chairman of the Administrative Board and in charge of hospital activities.

Dr. T. J. Hughes,

Roanoke, attended a convocation of the International College of Surgeons in Mexico City, August

10-14, at which time the Degree of Membership was conferred upon him.

Dr. Robert B. Orr,

University of Virginia, class of 1938, who has recently been at the Lahey Clinic, Boston, is now at the Chelsea Naval Hospital, Chelsea, Mass.

Dr. E. W. Lacy, Jr.,

Formerly of Richmond, where he was engaged in private practice and employed by the Dupont Rayon Company, is now with the Remington Arms Company, Inc., Kansas City, Mo., where he is medical supervisor in their Lake City Ordnance Plant.

The William Osler Medal.

In order to stimulate interest and research in medical history among students of the universities of the United States and Canada, the American Association of the History of Medicine has established a Medal that will be granted annually to the author of the best student essay submitted to the Association. It has been named in honor of William Osler, who more than any other academic teacher succeeded in creating among students enthusiasm for the history of medicine.

The Association will award the Medal for the first time at its Eighteenth Annual Meeting to be held in Atlantic City, May 3-5, 1942. It will consider unpublished essays that have been written during the academic year 1940-1941 by men or women who at that time were students in Schools of Medicine and had not yet obtained their doctor's degree. Essays that are the result of original research will be given preference but the Association will also consider essays which, without being the result of original research, show an unusual appreciation and understanding of historical problems.

Essays must be sent before November 1, 1941, to the Secretary of the Association, Dr. Henry E. Sigerist, Institute of the History of Medicine, 1900 East Monument Street, Baltimore, Maryland, who will submit them to the Committee on Medals of the Association.

Officers of American Legion.

Dr. Q. H. Barney was recently elected commander of the American Legion Post 134. Dr. Carleton Moorman was made first vice-commander. Both are of Altavista.

Dr. Marion K. Humphries, Jr.,

Of Farmville, who completed his residency in ophthalmology and otolaryngology at the University

of Virginia Hospital July 1, is now associated with Drs. Hedges, Woodward, Fitz-Hugh, and Crigler, at 104 East Market Street, Charlottesville.

Return Your Information Card for the Directory Promptly.

About September 1, a card will be sent from the headquarters office of the American Medical Association to every physician in the United States and Canada, for information to be used in compiling the Seventeenth Edition of the AMERICAN MEDICAL DIRECTORY.

The directory is prepared at regular intervals in the Biographical Department of the Association, the last previous edition appearing in 1940. This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States; it has been especially valuable in the medical preparedness program. In it, as in no other published directory, are dependable data concerning physicians, hospitals, medical organizations and activities. The directory provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested.

Before filling out the information card, read instructions carefully. Physicians are especially urged to state whether or not they are on extended active duty for the medical reserve corps of the United States Army and Navy. Fill out the card and return it promptly whether or not a change has occurred in any points on which information is requested. If a change of address occurs before March 1, 1942, report it at once. Should you fail to receive a card before the first of October, write at once to the headquarters office stating that fact and a duplicate card will be mailed.

Dr. John B. Hamilton,

Class of '37, Department of Medicine, University of Virginia, who has recently completed a residency at the University Hospital, is now located in Kingsport, Tennessee, where he will limit his practice to roentgenology.

Dr. Hunter H. McGuire,

Winchester, was named president-elect of the American Ophthalmological Society at its last an-

nual meeting at Hot Springs, Va. The 1942 meeting will also be held at Hot Springs.

Dr. James F. Blades

Announces the opening of his offices in the Medical College of Virginia Hospital and Medical Arts Building, Richmond, for the practice of general surgery. Dr. Blades recently completed a residency in surgery at the Medical College of Virginia Hospitals.

Dr. James T. Rountree,

Recently of Woodstock, has located in Harrisonburg, with offices in the National Bank Building.

Dr. Alfred E. Powell,

Class of '40, Medical College of Virginia, who recently completed an internship at the University of Virginia Hospital, has located for practice at Madison.

Dr. Dexter Davis,

Of Roanoke, is taking special work at the Manhattan Eye, Ear and Throat Hospital, New York City.

The American Academy of Ophthalmology and Otolaryngology

Will hold its forty-sixth annual meeting at the Palmer House, Chicago, October 19-23, under the presidency of Dr. Frank R. Spencer, Boulder, Colorado. The program will consist of one general scientific meeting on the morning of the first day, separate programs for the two specialties on alternate afternoons, and instructional courses every morning beginning on Tuesday. The feature of this year's general opening meeting will be a symposium on vertigo. Speakers of international prominence have been obtained for this meeting. Dr. William P. Wherry, Omaha, Nebraska, is executive secretary-treasurer.

The Southern Tuberculosis Conference

Is to hold its annual meeting at the George Vanderbilt Hotel, Asheville, N. C., September 15-17, under the presidency of Dr. H. Frank Carman of Dallas, Texas. Detailed information may be received from the Virginia Tuberculosis Association, 504 Atlantic Life Building, Richmond.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are

available to our readers, the only cost being return postage:

Barr, D. P.—Modern medical therapy in general practice. 3v.

Butt & Snell—Vitamin K.

Child, C. M.—Patterns and problems of development.

Davenport, C. B.—Medical genetics and eugenics.

Davis, M. M.—America organizes medicine.

Drinker & Yoffey—Lymphatics, lymph and lymphoid tissue.

Ellis & Wells—The chemical action of ultraviolet rays.

Etheredge, M. L.—Health facts for college students.

Fletcher, E.—War wounds and injuries.

Gause, G. F.—Optical activity and living matter.

Goodman & Gilman.—The pharmacological basis of therapeutics.

Grollman, A.—Essentials of endocrinology.

Hurd, H. M.—The institutional care of the insane in the U. S. and Canada. 4v.

Ladd & Gross—Abdominal surgery of infancy and childhood.

McGillycuddy, J. B.—McCullycuddy agent; a biography of Dr. Valentine T. McGillycuddy.

Nicholls, T. B.—Organization, strategy and tactics of the army medical services in war.

Pintner, R.—The psychology of the physically handicapped.

Rasmussen, A. T.—The principal nervous pathways.

Snell, G. D. ed.—Biology of the laboratory mouse.

University of California—Hospital formulary and compendium of useful information.

Weyl, C. *et al*—Radiologic physics.

Zondek, B.—Clinical and experimental investigations of the genital functions and their hormonal regulation.

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Obituary Record

Dr. Richard McCord Hoffman,

Orkney Springs, died June 17, at the age of sixth-one. He was a graduate of the University of Virginia, Department of Medicine, in 1907.

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tion of milk sugar and potassium chloride; altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and physical properties.

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A vintage advertisement for Pablum. The top half of the image shows a baby's face in profile, looking towards the right. The baby is wearing a white bib with the word "EATS" written on it in dark, blocky letters. To the right of the baby is a large, tilted can of Pablum. The can is white with a grey border and features the brand name "PABLUM" in large, bold, black letters. Below the name, there is a paragraph of text describing the product as a "thoroughly cooked and dried palatable mixed cereal food, vitamin and mineral enriched." It lists ingredients like wheat germ, yellow cornmeal, oatmeal, bone, specially prepared for human use, sodium chloride, powdered dehydrated alfalfa, leaf, powdered yeast and reduced iron, cooked thoroughly and dried. It also mentions that the formula was devised by the Pediatric Research Foundation of Toronto to furnish not only high nutritive value but also vitamins B and C (riboflavin and essential mineral elements - Phosphorus, Iron and Copper). Below this, it says "REQUIRES NO COOKING" and "Add milk or water, hot or cold." and "Serve with milk or water." At the bottom of the can, it says "MEAD JOHNSON & CO. EVANSVILLE, IND." and "KEEP IN A COOL PLACE". The bottom half of the image is a solid light brown background.

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VIRGINIA MEDICAL MONTHLY

THE N.Y. ACADEMY
OF MEDICINE

OCT -4 1941

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Official Publication of the Medical Society of Virginia

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Annual Meeting—Medical Society of Virginia
Virginia Beach, October 6, 7 and 8, 1941



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RICHMOND, VA., OCTOBER, 1941

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Guest Editorial

The Great Intruder

ALFRED FOURNIER, the great French syphilographer of the last century, spoke of syphilis as "the great imitator". This disease may involve any part of the body, producing the symptoms of many nonsyphilitic conditions such as cancer, pernicious anemia, ulcer, osteomyelitis and a number of dermatologic and neurologic maladies.

Fournier's dictum might likewise be applied to allergy. The differentiation between sinus disease, head colds and nasal allergy is often difficult. Allergic headache closely resembles headaches from other causes. Neuritis caused by angioneurotic edema of the nerve sheath is not uncommon. The differentiation between infantile seborrheic dermatitis and allergic eczema is sometimes impossible. Allergic infiltration of the lung may produce X-ray findings indistinguishable from pneumonic consolidation. Many a normal appendix has been removed because of abdominal allergy. Kidney colic may be caused by allergic edema of a ureter. There is a form of intermittent hydrarthrosis involving multiple small joints instead of single large joints, which closely resembles recurring subacute infectious arthritis. The outstanding difference is the nearly complete disappearance of subjective and objective signs between attacks. Foods may cause it.

Allergy might also be termed "the great intruder". The allergic reaction colors the picture of many nonallergic disturbances, either by exaggerating the usual symptoms or by modifying them, thereby increasing diagnostic difficulty.

Nasal allergy is a frequent concomitant of true sinus infection. In many cases this intruder prevents the rhinologist's obtaining good results by local treatment. Control of the associated nasal allergy often facilitates greater success with rhinologic methods.

Migraine is in a last analysis but a symptom. As brought out by Lennox in his recent volume, "Science and Seizures", certain persons seem predisposed to migraine, possibly on the basis of inheritance. Many factors such as fatigue, worry, constipation, may precipitate attacks. Sensitization to foods is so often an exciting factor that we have come to use the term "allergic migraine". If the allergic factor could be eliminated, there would still be migraine, but its frequency would be diminished.

Food allergy often intrudes in organic disease of the gastrointestinal tract. Many a patient with peptic ulcer, a nonallergic disease, has failed to respond to the usual Sippy diet, only to find himself allergic to milk. In such cases, changing to milk-free diet often gives relief. In the same way, food allergy may exaggerate symptoms caused by true cholecystitis. Patients with gallbladder disease often remark that specific foods such as cabbage, onion or melon must be avoided because they are apt to produce a gallbladder attack.

There are many causes of colitis. No matter what the specific etiology in a given case, if allergy intrudes, the latter must also be controlled for best results. Two recent reports by Andresen and Rowe describe cases of true ulcerative colitis in which relief was obtained only after allergic therapy.

Intrusion of allergic sensitization is probably the chief factor in the symptomatology of malaria. It has long been known that the injection of foreign protein into a sensitized animal may produce protein fever. As long as the plasmodium is growing within the erythrocytes, the body tissues are protected, but with its extrusion into the blood we witness the intrusion of the allergic factor manifested by protein fever.

There is yet another way in which allergy may intrude. Sensitization may interfere with the customary treatment of some nonallergic diseases. Treatment must then be readjusted. Food sensitization in peptic ulcer has been mentioned. The diabetic who becomes sensitized to insulin and the pernicious anemia patient allergic to liver extract present real problems. The man with tuberculosis, allergic to many foods, may require highly individualized treatment. Allergic principles would call for dietary restrictions while the infection requires a liberal diet. Many persons with chronic dermatoses become sensitized to constituents of their ointments. They wonder why the eczema, apparently healing nicely, suddenly becomes worse. Good dermatologists, aware of this, patch test their patients with new ointments or even with the old ones, before recommending their use.

After a patient has become sensitized to horse serum, the routine of serum therapy must be radically altered. Sensitization to drugs such as aspirin, quinine, the arsphenamines and the sulfonamids necessitates changes in treatment.

Allergy may indeed become an important interloper.

WARREN T. VAUGHAN.

Special Article

COMMENCEMENT ADDRESS—1842*

AUGUSTUS LOCKMAN WARNER, M.A., M.D.—1807-1847

Professor of Surgery and Dean, Medical College of Virginia.

EDITOR'S NOTE: This address, the only existing copy of which is in the Surgeon General's Library, is one of the very few examples of the writings of a remarkable young man—the genius behind the founding of the Medical College of Virginia and the pacemaker of medicine in this locality in his day. We have thought it worth reproducing in these columns.

GENTLEMEN:

You have been so cordially and eloquently welcomed to our plain fireside, that it would be affectation in me to attempt a repetition of it on this occasion.

Candour compels me to say, that I have been at a loss to select a theme which would interest or entertain you. If I should describe before you the tumultuous and boisterous political strife raging throughout our country, I should but disgust you with a display of the worst passions of our nature. Nor should I be more happy in the selection, if I should tell you of the ruin and despair which move like the burning sirocco over our fair land. These constitute a part of the politicians' duty, and to his hands we cheerfully resign them. To us belongs, what the thoughtless world would call a mere gloomy task, the investigation of the multiform ills to which our flesh is heir: for although our chiefest study is man, yet it is not gay and lightsome man; ruddy in health; buoyant in spirits—the admired leader of the Bacchanal riot, or the attractive centre of the social pleasures. But it is man bearing upon him the weight of the primitive curse; tortured by bodily suffering and disease, and fearfully gazing upon that moment in the future, which severs the dearest and most cherished ties. Gloomy indeed is this employment to him, who seeks his sole enjoyment in the sunshine of the fashionable world, or sports where ambition holds her court:—but to you, who have dedicated yourselves to a high and responsible profession, let me say, that dark and forbidding as are the portals of the Temple of Medical Science; yet within, there are many richly tessellated aisles,—its niches are decorated with the honored dead, and

around its altar may be found a goodly portion of the wisdom, talent, and virtue of the age. Probationers at the threshold, you anxiously inquire what requisition will be made upon you, when the long wished-for hour shall arrive, that ushers you within its walls. At this season, whilst the paternal fireside which is yet passing vividly before your mind's eye, and the farewell which affection has so recently sounded in your ear, exert their mollifying influence on your hearts and prompt to noble and honorable resolves, I say at this season, it is peculiarly appropriate that your attention should be directed especially, to the object for which you will be temporarily alienated from those guardians, who have guided you from infancy to the threshold of mature life.

Young men!—has the question yet occurred to you,—why the frowning mountain which bounded your horizon from childhood, has gradually faded and is now lost in the distance?—Or why the wave which lashed the sands of your natal shore, no longer murmurs sweetly on your ear? Is it that you have come to join in the sports and giddy amusements of the metropolis?—Is it that you desire to learn how men exist when congregated? Or is it not rather that you are here to select the stores, and man your little bark for the voyage of life—a long and tempestuous voyage,—alternated by sunny days and clouded nights, and whose haven, though gilded with hope, lies far—far in the distance. A voyage safe only to him, who has sedulously and carefully provided for all emergencies;—for then he may grasp the helm with confidence, and launch forth upon the ocean, and with lightsome heart exclaim, with the fearless mariner,

“If a storm should come and awake the deep—

What matter! What matter! I can ride and sleep!”—

The profession which you have adopted, having relations as extensive as the human family, attracted to it the attention of the philosopher and philanthropist, and how remotely it may date its origin is not revealed by faithful history;—for as the organization of man unerringly proclaims his proclivity to disease, and evidently nurses within

*Delivered before the students of the Medical Department of Hampden-Sydney College in Richmond, Virginia, Fall of 1842, and published at the request of his students.

itself the seed of its decay, it is rational to presume, that the first pang that agonized mortality prompted the hope, and probably fanned that hope into a conviction that for every pang there was an antidote. Fabulous history tells us, that Medicine reposed in the arms of Music, Poetry and Eloquence; thus Apollo, presiding over the Muses, claimed for himself the invention of Physic, Music, Poetry and Rhetoric—

"Mine is the invention of the charming lyre;
Sweet notes and heavenly numbers I inspire,
Sure is my bow, unerring is my dart,
But ah! more deadly his, who pierc'd my heart,
Med'cine is mine; what herbs and simples grow
In fields, in forests, all their powers I know
And am the great Physicians call'd below.

Dealing with the infirmities and ills incident to our nature, which of themselves were regarded as visitations upon man by an offended supernatural power, it was not remarkable that the whole range of the Therapeutic art was limited to charms, incantations and offerings of propitiation to an unseen and imaginary deity. Simple and rude as was this commencement of the healing art, it proclaimed for it is a high and distinguished destiny;—for admitting all disease to spring from an ever ruling and invisible agency, they who were presumed gifted with the mysteries of the healing power, were elevated to a commanding position, and maintained an ascendancy and control, awarded to none others. Thus humble and obscure as was its origin,—in the midst of superstition,—medicine engaged, at the earliest period of refinement, the attention and respect of the philosophers and sages, and at a very remote time, we find it intimately blended with all philosophical and literary pursuits. This intelligence must be gratifying to you, who are yet ignorant of the history of your art; for in these latter days—these boasted days of refinement and civilization, a daring effort is being made to degrade medicine, (justly entitled to the highest range amidst the sciences, from the accuracy of its principles, its vast and extended connections, and the brilliancy of its achievements) and by prostrating her, rank her amidst the chimeras and impostures of the age; for many there are, who claim to be among the most enlightened and refined, merely that they cannot appreciate the leading principles of the profession of medicine, denounce the whole as a system of em-

piricism, and madly throw themselves into the embraces of charlantry and artful cunning.

It is not my intention to dwell minutely upon the history of medicine, nor to occupy your time in a useless discussion upon its antiquity. Its origin was humble, its progress slow—its history chequered. At one time the tenant of the cloister, at another the pampered guest of the court.

The progress of refinement and letters favored its advance, and moving *pari passu* they ever appear on the page of history bound together by the closest chords of friendship. But like many early and cherished associations, the period arrives, when new desires and dissimilar pursuits rupture the bands, and medicine is seen stemming the torrent alone. It is now that her influence, her power, her beauty are disclosed, in her train of admirers are seen age and youth, talent and wealth, alike struggling for her favors. Old times have passed away. The fantastic dress, which the priest of Iris threw about her, although remodeled by the Benedictine Monk of Salerno, has been cast aside for the gorgeous purple and ermine, with which she was bedecked by royal hands. No longer she bathes her languid limbs in the mystic stream flowing by the portals of the Egyptian Temple,—or timidly hides herself behind the altar. Her gait is lofty, and she walks stately through the palace, or softly through the cot.

Cicero has said that in nothing do men so nearly resemble the gods, as in relieving the sufferings and infirmities of their fellows. Doubtless this sentiment meets a response in almost every human bosom,—for that heart must indeed be callous, that can gaze upon suffering unmoved. Yet how fruitful of evil may this sympathy become. To sympathize is indeed godlike, but if that sympathy beget rashness, how damning may be the result. From sympathy should flow the cultivation of the ability to relieve, and he who would desire to exercise this benign influence upon his fellow, should examine narrowly whether he is possessed of all the pre-requisites. It is this examination, which determines the line of demarkation between science and empiricism; without it the brazen impudence of the charlatan would remain unexposed, and his path, though spotted with blood, would be watered by the tears of gratitude. To you, young gentlemen, does this fact appeal most cogently,—for it matters not, whether he who professes the healing art, ignorant of its principles, is labeled Swaim's Panacea, Morrison's Pills, or holds in his

hand the parchment that proclaims him Doctor Medicini; he is still the empiric,—the brutal gamester, who scores his games with blood, and whose stake is human life. Behold then the inscription over the portal of the Temple of Medical Science.—“He who would be an accepted votary at this shrine, must consecrate himself, by unremitted toil.” Do not infer, that I believe for a moment, that you have entered these halls with any other than the laudable desire of obtaining that knowledge upon which your professional reputation is hereafter to be based. But it is the error of youth to decorate the future in the richest and most attractive attire, and to pass heedlessly by the present. Tomorrow is ever the laboring day;—today is unimportant, because tomorrow promises to accomplish what today neglects. To warn you against this fatal procrastination, I have ventured to place before you the melancholy consequences. Of what the Science of Medicine now consists, it is not my province to tell. Other and abler hands will lead you through the vast stores which ages have accumulated,—will throw aside the rubbish and expose to you the pure building material, and eloquently describe the beautiful structure which is being completed. You will then wonder no longer, that centuries have passed since the foundation was laid, while you will be enraptured with the beauty of its proportions, the purity of the order, the richness of its decorations;—and you will be warmed into holy enthusiasm as you walk along its quiet and peaceful aisles, and by the softened light, shed by the setting sun of bygone days, behold the shades of Hippocrates, of Galen, of Boerhaave and of Harvey commingling with those of Rush, Shippen, Wistar and Physick; and hear their harmonious prayer for the well-being of all mankind, to the remotest generation.

The study of medicine at the present day is no pleasing and inviting task to the novice. His duty no longer consists in acquiring a general or superficial knowledge of the human structure, or memorizing a few established axioms. The day of theory has passed by, and although the cypress which hangs over the tomb of our undying Rush, is as verdant as when Apollo transformed Cyparissus, yet his theory is cherished only as an emblem of his genius;—and with the brilliant theories of Hoffman, Sahl, Cullen and Brown constitutes but an integrant part of that grand eclectic system, which proclaims this to be the utilitarian age.—Well may the bibliograph-

ist inscribe upon the title page of his work,—the Philosophy of Medicine.—A few isolated facts constituted the basis for an ingenious theory, and he who displayed most subtlety or acuteness of reasoning attracted most admirers. The medical world was marshalled under the standard of some favorite leader, and gallantly did they march to combat. The battle is not always to the strong, nor the race to the swift; and thus as you turn the pages of history you will find the poetic and fanciful theory of Stahl giving place to the more favored solidism of Hoffman; the brilliancy and splendor of Cullen is dimmed by the meteoric blaze of Brown, while the Western Star shines beautifully bright in the theory of Rush. Changes and threatened overthrow marked every page of history, and confusion, doubt and fearful mal-practice followed in their train. A philosophical mode of reasoning was now introduced and the inductive system of investigation brought to bear upon the scattered truths which ages had accumulated. The task of arranging these facts and deducing principles, fell to the lot of Broussais,—and France who had ever drawn her light from her neighbor's lamp, now boasts of a new, brilliant and philosophic theory. Of that theory I shall speak hereafter. It is the connecting link between the present and the past,—contains much to admire and much to condemn—and although energetically denounced, it will remain a monument to his genius, and like the Pyramid in the desert, attract the wondering and admiring gaze of generations reposing in the womb of time. We have claimed for the present, the enviable privilege of enrolling medicine among the precise sciences, and he only who has been a constant student can appreciate the ground upon which we rest this claim. We frankly admit that we have discarded all theories, and place the reputation of our profession upon the brilliant discoveries resulting from the unceasing investigations of the last twenty years. In that period, so vast have been the discoveries and so important the results, that he who ceased his labors at its dawning, will find, like Rip Van Winkle, that while he enjoyed his dreamy slumber in Sleepy Hollow, the sceptre had passed into other hands, and a new and more active population are denizens of the soil.

The characteristic of the present system of inquiry is a patient investigation after truth. The discovery of an irrefutable fact is hailed as a brilliant snatch from the sand,—it is intrinsically

valuable, though it may be a long period before it decorates a tiara. In anatomical investigations the name of the organ, its form and location, is now merely regarded as the outline of the work;—each fibre and every particle that aids in constructing that fibre must pass under the microscopic view of the investigator. He must examine its form, accurately decypher its relation to its fellow, analyze the constituents of which that particle is composed, and then he conducts it to the hands of the physiologist, for his scrutinizing observation. Such examinations must eventuate in a thorough and complete analysis of every part of the animal frame, and as far as anatomy is concerned, it may be said to be almost entitled to rank among the precise sciences.

Physiology stands not far in the rear of anatomy. It does not now content itself with viewing the heart as it makes its propulsive effort to supply the vessels that surround it,—but it removes the heart,—examines the arrangement of every fibre,—calculates its power, direction and influence: passes along the blood vessels; contemplates not only their structure and arrangement, but insists upon witnessing their action when healthily employed. Arriving at the extreme termination, it catches a particle of blood and measures what it has lost or gained,—for what object it was destined, and how far it influenced, or was influenced, by the vessel that circulated it, or the structure to which it was conveyed. By this process, it investigates all the structures of the animal body, and having collected a series of facts, so arranges and classifies them as to deduce a general law. Nor has one set of organs alone arrested the attention of the physiologist. The composite portions of every organ, and the various elementary textures have all passed in review before his microscopic eye, and a series of general laws, as immutable as those of the Medes and Persians which altered not, have been the fruitful result. Not content to contemplate the work as a perfect whole, he has followed nature into the very doorway of her workshop,—demanded from her the mode by which she produced these magnificent events. Nay, he has caught her working upon the first elementary atom, from which she fashions man,—and having obtained from her the outline of her plan, he walks with her, hand in hand, or dogs her path, to catch new mysteries as she carelessly displays them. Of the general physiological laws, it does not become me to speak here, but in presenting them to you hereafter, as the basis

of all pathological reasoning, I shall be compelled to carry you back to the investigations from which they are deductions, and you will then discover that much that now appears to you mysterious and wonderful, is accomplished by the action of a very simple natural law,—a law always in operation and developing similar results in both the vegetable and animal kingdoms. Vitality will then no longer be inexplicable, for by contemplating it in its most elementary and simple operations, you will only wonder why it should so long elude the grasp of the inquirer, or how such grand displays can spring merely from the aggregation of simple and feeble elementary operations. Here then will there be an ample field for the exercise of all your faculties, and as you stray along that, which had seemed to be a rugged and forbidding path, you will gather, here a gem, and there a brilliant, fragrant flower; and as your flagging spirit seeks repose, you will be soothed by the reflection that you have been companioning with the wisdom and labor of the past, and while interrogating nature, looking through her up to nature's God.

Thus far advanced, the student has gained but an ingress to the vestibule of his profession. He has examined the intricate mechanism of man, calculated the relative bearing of the several parts of his organism,—followed them through the whole range of their operations,—has become familiar with the action of vital laws and is prepared to explain how healthful man is hourly sustained. As yet he has not beheld disease. He can well imagine that with such an elaborate and exquisitely constructed frame, he can resist the pernicious influence of surrounding objects, or perpetuate his existence. Of disease he dreams not. He can understand how, when four score and ten has been completed, the mechanism so incessantly employed, may feel the blighting influence of wear and tear. Nay, he can argue with himself and bring conviction to his mind, that the ruddy cheek of infancy, must of necessity (under the influence of the laws of growth) give place to the fulness and grandeur of mature life. He may even comprehend how that maturity may sink into feeble, tottering old age, and may calmly watch the flickering of the expiring flame of life: but how amidst these sturdy vital acts, disease can paralyze, is yet to him a mystery, unrevealed. He has forgotten to perceive that in the perfection of the animal organism is concealed the element of its destruction.

The varied objects that surround him,—the air that vivifies and sustains him,—the gentle rain that supplies him with nutriment,—the objects that delight his eye,—the music that lulled him to repose,—nay, all the sources of his enjoyment,—may, under peculiar circumstances, be pernicious in their influence, and become fruitful causes of suffering, disease or death. The study of these causes and the mode by which they modify the physiological laws, so as to develop a new train of phenomena, at variance with them, constitutes in part the study of medicine. When the body is guided and controlled by those normal laws which are the consequences of its organization, and which are necessary to its support, it is said to be in health; when it displays new phenomena, irreconcilable with its organization, its functions are perverted, and it is pronounced, diseased. To measure the extent of this aberration from the normal state, and to estimate its results, is the province of Pathology. To devise appropriate means, and to select the agent which will restore the natural functions, is to develop the resources of Therapeutics.

While I have given you a bird's-eye glance at the Science of Medicine, I have studiously avoided reference to the department which has been assigned to me; not that its claims are humble or its designs uninteresting,—but rather to elude the operation of that natural impulse of the human heart, which prompts it to dwell, incessantly, upon the objects which it fondly loves. To parade before you the history of Surgery, would be to display a bloody sheet, and probably instead of entangling you in its toils, disgust and ultimately repulse you. Yet many of its achievements have been so brilliant, and its career so ennobling, that I should be wanting in respect to the past, to entirely neglect its claims.

I will not, Gentlemen, contend that Surgery was rocked in the cradle with Medicine, or drew its early nutriment from the same fountain; nor will I argue that Tubal Cain was an artificer and a manufacturer of surgical instruments. To Medicine I cheerfully award priority of existence, and while I concede to her all that can be claimed for the symmetry of her person, the refinement of her manners, and her gentle and lowly bearing as she passed along, scattering her beneficent gifts on every hand; ministering in the cot as well as in the palace; smoothing the brow so lately wrung with anguish; wiping away the tear-drop and planting a smile where sorrow had

selected her abode;—admitting all this, still I cannot overlook her younger brother, chivalric and daring in spirit, whose heart is softened by the same benevolent designs, whose gifts are as rich, though dispensed by a crimsoned hand. When Medicine was bathing in the pellucid streamlets of Egypt and vainly admiring the symmetry of her proportions as they were reflected from their mirror-surface, or joined in the gorgeous rites of the Temple;—Where think you was her brother? Revelling in the splendors of the Court or sharing Regal favor?—Far different was his lot. His path was rugged and thorny,—his home the roadside,—his employment dispensing charity, and pouring the healing balsam upon the wounds of the strolling mendicant. Such were their different fates in early youth, but in adolescence the natural and undying impulse (which emanates from the accidental circumstance of drinking from the same fountain and reposing upon the same maternal bosom) prompts them to seek each other; and having again embraced, we find them united by the bonds of an indissoluble friendship;—and blighted be the hand that would attempt to sever them.

The pages of Surgical history are covered with such variety of thrilling incidents, and record so many tales of horror, that the heart of the student fails him ere he has turned them half over. At one time he finds Surgery gloting over the wounded and the dying, as they are borne from the battlefield: and at another beholds it breathing the pestilential atmosphere of the charnel-house, where the half-putrescent body is hurrying to decomposition. It is true the surgeon cannot delight him with such brilliant theories as marked the onward progress of Medicine, but he can fire his ambition, as he points him to the dazzling trophies of his art.

Think not young gentlemen, that I intend to require for the successful cultivation of Surgery, a higher order of intellect than is demanded for Medicine—far from it. I ask for both a mind of natural energy and activity, and a severe and rigid tutorage. The achievements of Medicine, although apparently less brilliant than those of Surgery, are equally as important; involve the same castigation of mind, the same rigid observation, the same anxious attendance,—but they are not as palpable to the senses, and consequently not as productive of reputation. For this reason, if none other could be adduced, Surgery commends itself to the attention of every student. A skilfully executed surgical operation will

seldom fail to bring an additional modicum to the reputation of the surgeon,—while a long catalogue of diseases, judiciously and successfully treated, may fail to attract even a passing notice; for although the mutilated body is an opprobrium to the healing art, still it is a sign-post for the skilful operator. Such being the advantages which flow from the cultivation of Surgery, we cannot fail to commend it to the favorable consideration of all who are struggling for professional fame. But I hear one of you whisper, is there no higher incentive for the cultivation of Surgery than the sordid, selfish motive I have adduced. Aye! there is a far nobler and more elevated impulse—the desire to alleviate the sufferings of your fellow, or to snatch him from an impending death. Nor does Surgery confine itself to these restricted bounds. It professes to correct the errors of nature, when she strays from her usual and legitimate course, so that there is scarcely a mal-formation that is not under its immediate control. I need not enumerate the elements which compose the long list of mal-formations which are hourly exhibited, where individuals are densely congregated,—for the mind immediately calls up hare-lip, stammering, squinting, congenital blindness, club foot, and a long catalogue of deformities, which mar the beauty of the human frame, or interrupt the even current of human enjoyments. Well might the Roman orators assert, that man approximates the gods when he alleviates the sufferings of his fellow, or corrects the deformities which mar his happiness;—for one of the brightest pages in the life of the Holy Nazarene is, when on His errand of mercy, He made the blind to see;—the lame to walk.

From this hasty sketch you must have perceived, that of all others, your profession presents the greatest number of allurements to the youthful mind;—for it is a natural attribute of the youthful heart, to commiserate the infirmities of others, and to desire to relieve them. This therefore is the suitable hour to plant the seed of a profession, which blooms luxuriantly only, in a rich fertile soil. Now the mind is elastic, and readily adapts itself to the severest study. Ambition is kindling its first fire,—and Hope is in advance of you, gilding the future. When can there be an hour more appropriate for the dedication of your talents and energies to the business of life? Hereafter, the excitement and turmoil of the world will distract you, and the chilling influence of society will extinguish the flame which

youthful ambitions kindled. Let no pleasure seduce you, no allurements beguile you from your path.

It is not unfrequently the custom, upon the opening of a season of Medical instruction, to alarm and intimidate the student by a solemn parade of the difficulties he must immediately encounter; and many an ingenious youth, has suddenly turned aside from the path which his best reflection had selected. If what I have already said, has tended in any measure to produce such an impression upon your minds, I have over-leaped my intention. I have desired merely to elevate your profession in your estimation, and to place it before you as it now stands in the view of the learned of every country. That some difficulties will be encountered is what you all have reason to expect, but that they are insurmountable by the industrious student, is more than I am willing to admit. Industry always reaps as its reward, knowledge. Indolence gathers ignorance as its harvest. There is a casket of rich gems placed before you; each one is brilliant and beautiful; the diamond is the most dazzling, the ruby is the richest, but the emerald is the greenest, while the sapphire is the deepest blue. Which shall you select with which to ornament a diadem? Will you take the diamond and neglect the ruby, the emerald and the sapphire? Or would you not rather place them all side by side, and instead of robbing each other, they will blend their beauty in one harmonious whole? Thus it is with the departments of Medicine. Anatomy calls upon you for admiration, Medicine stands hard by, Surgery boldly asserts its claims, and Chemistry and Therapeutics are ready to dispute them. Attach yourselves to no one in particular,—salute all cordially, and make them all companions.

Having said thus much, I might now consider that I had given you a formal introduction to your profession, and leave you to direct your own steps—but cast your eye around you, and you will discover that there are some who have been attracted, not like you to hear the first lecture of a course in which they are hereafter to participate, nor have they come expecting an eloquent discourse from the lecturer; but they are here, as an earnest of the deep interest which the community feels in the disposal which you are about to make of your time—They come to cheer you onward—and to offer an approving salutation for the attachment you have displayed to your native soil. They are here to join hands with you, as you battle with that degrading prejudice, which

has well-nigh made the South vassal to the North, and proclaimed to the world, that the sun of Virginia's greatness has suffered a total and eternal eclipse. To ward off these melancholy results, it is necessary that her youth should be educated on her own soil, and under the benign influence of her own institutions. If this servitude must come, let it be when your children's children are sleeping in their graves, and Virginia is prepared to admit that her lofty mountains and fertile valleys, her delightful climate and her domestic institutions, deteriorate the human mind.

The institution, which for several years has presented her claims before the medical community of the South, and which you this day honor with your presence, professes no higher origin than the heartfelt desire of a few humble Southern physicians to recal those truant sons of the South who had wandered from their homes. Unrewarded labor—denunciation, and legislative neglect, instead of repressing their ardor, prompted them to renewed exertions; and at length, through your generous countenance they recognize the dawning of the full realization of their most sanguine hopes. The establishment of such an institution was demanded by Virginia. Her youth, which constituted by far the larger portion of medical students, annually thrust from the influence of her domestic institutions, were not unfrequently alienated or attainted in sentiment upon those questions, which are of vital importance to the prosperity of the South, and their own personal advancement. Fettered, as she has been in trade, and tributary to the North, to the amount annually of millions, while it humbled her pride, left her still in the possession of her chosen and beloved associations; but when the South educates her sons among a people who have no common feeling and interest with her domestic institutions, she is forging the great lever which must ultimately prostrate and despoil her. If we are ever to burst the shackles of an insulting bondage, when is the first struggle to be made? Is it, when the demon of fanaticism, maddened by our supineness and submission, has tracked her polluting footsteps over her violated rights?—or, is it not rather now, when we can erect a barrier and bid her, thus far thou mayst come, but no farther,—and fearlessly tell her, that she can no longer dazzle and allure us by the ignis fatuus, which floats over an engulfing morass?

When a few more fleeting hours shall have passed

away, you will have entered upon the vast sea of medical inquiry.—Facts, opinions, theories, will be passed in review before you.—You will be enchanted with the beauty and ingenuity of some, confused and bewildered by the subtlety of others, and you may even be surprised at the freedom with which we handle great names. Theories must be discussed, errors must be exposed, and truth made triumphant—but, gentlemen, do not mistake the motive, or the language in which that motive is couched. It is a friendly warfare, and is only characterized by that peculiar roughness which has ever distinguished our profession. Fear not, if at any time you should hear a favorite position of your own rudely assailed—for, probably at the next hour, you may find it as ably defended—for, I assure you, while the assailants of the ill-starred Broussais have tarnished his fame, and labored actively to consign him to an odious immortality, there have been hearts as warm, and tongues as eloquent, to chaunt his praise and eulogise his talents—and even now, devoted hands are weaving a chaplet to surround his undying fame. This contrariety of opinion will enable you to view all that has been presented in Medicine, and afford you the opportunity of selecting that which is worthy of preservation. In all your inquiries, forget not that man is the object of your pursuits. Created in the image of his God, and impressed with capabilities for the highest attainments in goodness and knowledge, he is still touched with mortality, and threatened with blight and decay. Prattling infancy, restive adolescence, vigorous manhood, and tottering age, alike, must feel the paralyzing hand of Death—for beautiful as is that frame in its maturity—disease—decay may soon assail it, and the mind exuberant in youth—the spirits, elastic and buoyant in health—and the cheek, roseate with blooming youth, but provide for the despoiler a richer and more sumptuous banquet. Despond not, then as you cast your eye over the long drawn catalogue of human diseases, if you should find each page marked by the footsteps of Death—for, it was promised him he should ultimately triumph, in defiance of all the powers of man.

There is a faculty of the human mind, which, whether we desire it or not, carries us back by retrospective steps to the scenes through which we have already passed. Memory is the agent that accompanies us, and he is every busy in seeking out some shaded spot on which to rest, or some moving scene

to soften our hearts, or improve our conduct. It is memory, which enables imagination to pass before the eye the scenes of childhood, though long ago departed—It is memory, that points out the mossy bank on which, in early youth, we sported—It is memory, that charms the ear with that merry shout which had long since been forgotten—It is memory, that paints before old age, in glowing colors, the home so sadly changed by time—It is memory, that

recalls those accents, ever sweetest to the ear, a mother's greeting—So is it memory, that calls up, in grim array, time mispent, opportunities neglected, and ever sounds in the ear those upbraidings, which pricked conscience can never quiet. Then, gentlemen, let your time be well spent—Let every opportunity be improved, so that you may join with memory in his gayest revel, or follow him in his most erratic excursion.

SPIROCHETAL JAUNDICE IN VIRGINIA*

With Special Reference to Laboratory Diagnostic Methods

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Weil's disease or spirochetel jaundice is an infection with *Leptospira icterohemorrhagiae* or *Leptospira canicola*. This disease has been reported with increased frequency from the European countries for twenty years, but only recently have other than occasional cases been recognized in the United States. The greater opportunity to contract the infection through water accidents and poor sanitary conditions in certain areas is undoubtedly responsible for the higher incidence of the disease abroad. For example, the majority of the cases occurring in The Netherlands, where the disease is reportable, are contracted as the result of swallowing or aspirating water while swimming or through falling into polluted canal water. In addition to this mode of infection, certain occupational groups, coal miners, junk dealers, meat, poultry and fish market workers, sewer cleaners, slaughter house workers and the like are more apt to contract the disease than others because of the greater chance for direct contact with rat excretions. Veterinarians also are liable to infection with the dog strain of leptospirae through the handling of infected animals.

It is in the above mentioned groups that we find most of the cases occurring in this country. There is little reason to doubt that numerous cases of the milder forms of the disease go unrecognized or are clinically confused with epidemic jaundice. It is with these cases that the laboratory can aid materially in establishing the correct diagnosis.

Spirochetel jaundice is characterized by an acute onset with chills, fever, and severe muscular pains, particularly in the calves of the legs. An interstitial nephritis and jaundice may supervene. The incubation period is five to seven days. Two stages are evidenced. During the first stage, a septicemia occurs, the organisms being found in the blood and internal organs. During the second stage, a toxemia and jaundice appears. The spirochetes disappear from the blood, but may be excreted in the urine. Agglutinins and lysins begin to appear in the serum. Leukocytosis with an increase in polymorphonuclear cells is present. The disease may vary in intensity from an ambulatory type to a severe form terminating fatally. Jaundice may or may not appear. It is seldom seen in infections with *Leptospira canicola*.

In contrast, epidemic jaundice which is thought by Findlay¹ to be caused by a virus is characterized by loss of appetite, nausea, vomiting, fever, loss of weight, headache and drowsiness. There is usually a leukopenia. Symptoms that are associated with Weil's disease occur in less than 20 per cent of these cases, but are frequent enough to require consideration in differential diagnosis (Molner and Meyer).²

The recognition of spirochetel jaundice was probably first made by Larrey in 1800 in Napoleon's troops. However, it was Weil in Germany who first described the disease as a clinical entity. The causal agent of Weil's disease was first isolated from the blood and tissues of cases by Inado, Ido, Hoki, Kaneko and Ito³ in 1915. In 1918, Noguchi⁴ first gave it the name *Leptospira icterohemorrhagiae*.

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Ido, Hoki, Ito and Wani⁵ in 1917 discovered the organisms in *Mus norvegicus* and *Mus alexandrinus*. They found that a high percentage of these rats examined were carriers and that the spirochaetes were usually found only in the kidney, especially in the convoluted tubules of the renal cortex. Okell, Dalling and Pugh⁶ proved the spirochetal nature of infectious jaundice in dogs by isolating the organism and by reproducing the disease in guinea pigs and dogs. In 1933, Klarenbeek and Schüffner⁷ first recognized *Leptospira canicola*, the spirochete producing this disease, as a separate species on immunological grounds. These spirochetes may be carried from dogs to man and set up the infection known as Weil's disease. Latent infection has been demonstrated serologically by Meyer, Stewart-Anderson and Eddie⁸ in about one-third of the normal dogs examined and in 60 per cent of dogs over six years of age. Dogs may be infected with either *Leptospira canicola* or *Leptospira icterohemorrhagiae*.

A survey of the following cities by various workers gives an indication as to the number of rats showing infection with *Leptospira icterohemorrhagiae* in the United States: San Francisco, 35 per cent; Nashville, 10 per cent; New York, 17-21 per cent; Albany, 40 per cent; Baltimore, 7 per cent; Detroit, 16 per cent; and Rochester, 38 per cent.

Cases of Weil's disease with clinical diagnosis supported by successful transmission of leptospiral infection to guinea pigs with blood, urine, spinal fluid or kidney tissue, or by satisfactory microscopic demonstration of leptospirae in tissues obtained at autopsy, or by serological tests have been reported in various parts of the United States; namely, Connecticut, New York, New Jersey, Pennsylvania, District of Columbia, Virginia, California, Michigan, Colorado, and possibly Texas and Rhode Island. In Virginia, one and the same case has been reported by Blanton⁹ and Mulholland and Bray,¹⁰ another one by Mulholland and Bray¹¹ and seven by Bloom and Walker.¹²

The increasing number of cases of Weil's disease being diagnosed in the United States indicates that this disease is more prevalent here than had been previously suspected. Since the clinician has turned more to the laboratory during the last few years for aid in the differential diagnosis of jaundice, the greater availability of materials and familiarity with the technic of spirochetal culture and study will result in additional case findings. The spirochetes

as a group are more difficult to isolate and cultivate than the majority of pathogenic organisms. Specialized procedures are essential for accurate diagnosis and for this reason, we are presenting the methods which have proven to us satisfactory in the laboratory diagnosis of Weil's disease. Brief histories of four cases also are given. Three of these cases were admitted to the hospitals of the Medical College of Virginia and one to the Retreat for the Sick, Richmond.** These same procedures were used to aid in the diagnosis of several of the cases recently reported by Bloom and Walker.

CASE HISTORIES

Case 1. J. B., an eighteen-year-old, colored, male, poultry picker was admitted to St. Philip Hospital, November 23, 1939, with a history of having been taken ill five days previously with a chill followed by fever, headache and general muscular pains which were most severe in the left flank and left lower quadrant. Jaundice was noted two days after admission. Agglutination tests† were positive in titres of 1-1000 against *Leptospira icterohemorrhagiae* on sera taken seventeen and twenty-two days from onset, whereas similar tests against *Leptospira canicola* were negative. Darkfield examinations and guinea pig inoculations with urine were negative with specimens collected on the ninth and thirteenth days of illness. The patient made a good recovery and was discharged from the hospital January 5, 1940.

Case 2. B. N., a fifty-six year old, white, male, pump operator was admitted to Memorial Hospital, January 25, 1940, with a history of having been taken ill ten days previously with a chill followed by fever and severe muscular pains in the lower part of the back. He had noted the appearance of jaundice two days before admission. A darkfield examination of the urine eleven days after onset of symptoms revealed the presence of spirochetes, although a guinea pig inoculated two days later with a fresh specimen of urine showed negative findings. A titre of 1-10,000 was obtained in agglutination tests against *Leptospira icterohemorrhagiae* forty-three days after onset of illness. Agglutination tests against *Leptospira canicola* were negative. The pa-

**The clinical history and laboratory specimens for examination on this case were obtained through the courtesy of Dr. W. G. Page.

†The authors wish to acknowledge the assistance given by Dr. C. L. Larson of the National Institute of Health, Washington, D. C., in checking the results obtained with the agglutination tests in our laboratory.

tient was discharged from the hospital March 5, 1940.

Case 3. G. M., a twenty-five-year-old, colored, male, poultry picker was admitted to St. Philip Hospital on December 6, 1940, with a history of having been taken ill five days previously with a severe chill followed by headache and general muscular pains. Jaundice was noted on admission. After an illness of nine days, an agglutination test with the patient's serum proved positive in a titre of 1-10,000 against *Leptospira icterohemorrhagiae* and negative against *Leptospira canicola*. A guinea pig inoculated with the patient's urine, collected on the twenty-third day after onset, gave positive gross autopsy findings. These were confirmed microscopically by the finding of spirochetes in kidney sections. Earlier guinea pig inoculations with urine and blood gave negative results. The patient was released from the hospital December 31, 1940.

Case 4. R. Mc. a forty-three-year-old, white, male, bricklayer was admitted to the Retreat for the Sick Hospital, February 7, 1941, with a history of having been taken ill January 21, 1941, with a severe chill followed by fever. He had remained in bed since that time. Jaundice was first noted one week after the onset of illness, his chief complaint having been a constant pain in the lower part of the abdomen. An agglutination test made fifteen days after the onset of the illness proved positive in a dilution of 1-10,000 against *Leptospira icterohemorrhagiae* while that against *Leptospira canicola* was negative. The darkfield examinations and guinea pig inoculations of urine were negative. The patient was discharged from the hospital March 8, 1941.

The causative agent of these cases was *Leptospira icterohemorrhagiae* as indicated by the clinical history and the high titre of antibodies demonstrated in the sera against this organism. All agglutination tests against *Leptospira canicola* were negative. Also, on the basis of high agglutinin titres obtained, we believe that at least three of these cases would have been diagnosed by serological tests at an earlier date had there been opportunity to obtain sera before their admission to the hospital. The occupations of these individuals were such as to suggest that all infections were the result of exposures of man to rat leptospirae by water accidents or contact with sewage, mud, soil, or garbage in the vicinity of rat harborages. Experimentally, it has been shown that guinea pigs may be infected through the unbroken

skin, mouth, nasal mucous membrane and abraded skin. A rat bite seldom produces an infection.

One patient in our group was a bricklayer and one a pump operator. Two others picked chickens in a market where rats are known to be numerous. The home environments of these patients were of a nature that rat borne infections were possible, but not probable.

LABORATORY DIAGNOSTIC PROCEDURES

In order to determine the type of specimen to collect for bacteriological examination, familiarity with the location of the organism in the body at different stages of the disease is essential. Future success in establishing the proper diagnosis of spirochetel jaundice will depend upon the close cooperation of the physician with the bacteriologist. In the bacteriological laboratories of the Medical College of Virginia, a suspected case of Weil's disease may be proven by one or more of the following methods:

I. PATIENT'S BLOOD.

a. After the first week of illness while a septicemia is present, or before jaundice and toxemia appear, a young (approximately 175 gm), preferably white guinea pig is injected intraperitoneally with 3 to 5 cc of patient's defibrinated blood. In infection, the chief symptoms in the guinea pig are fever and jaundice, the disease usually terminating fatally in five to twelve days. At autopsy, leptospirae may be found by darkfield examination of macerated liver and kidney tissue of the guinea pig or in sections of these tissues prepared with proper stains for spirochetel studies. They may be recovered, sometimes readily, but at other times with difficulty, by the inoculation of macerated kidney or heart's blood into Verwoort-Schüffner media and cultivated at room temperature.

b. A darkfield examination of a fresh specimen of the patient's defibrinated blood collected during the first stage of the disease is made, care being taken not to mistake the cellular fibrils for leptospirae. The morphology and movement of these spirochetes are very characteristic. The spirals appear at abrupt 45° angles and very active motility usually is noted.

c. After the second week of the disease or during the jaundice and the toxemia, the leptospira agglutination-lysis test using the porcelain plate method of Meyer, Stewart-Anderson and Eddie¹³ is of great value. Their test slightly altered is as follows:

ANTIGENS—Living four to six days old cultures of *Leptospira icterohemorrhagiae* and *Leptospira canicola* grown in Verwoort-Schüffner medium are used.

TEST: Using sterile tubes, the serum of the patient is diluted with Verwoort-Schuffner buffer solution in the following manner:

Tube	1	2	3	4
Buffer	1.2 cc.	0.9 cc.	0.9 cc.	0.9 cc.
Serum*	0.3 cc.			
Dilution	1:5	1:50	1:500	1:5000

*Transfer 0.1 cc. of the serum buffer mixture from 1 to 2, from 2 to 3, and from 3 to 4.

Two sterile porcelain plates are used for each specimen to be examined. Set up tests as in model given below, taking care to avoid contamination. Incubate for two hours at 37°C and examine each dilution by darkfield for agglutination or lysis. Agglutination often occurs in the lower dilutions.

Should killed antigens be used, set up additional tests in a similar manner. Incubate plates contain-

ing killed antigens for four hours at 37°C. Examine each dilution by darkfield for agglutination.

II. PATIENT'S URINE.

a. The sediment from 30 to 40 cc of fresh specimen of urine is collected during the second week of illness and injected intraperitoneally into a young, white guinea pig. Should the test prove positive, the clinical picture of Weil's disease as above described in this animal is seen. *Leptospirae* may be seen by darkfield studies of kidney suspension and heart's blood and in section when impregnated with silver. They may be recovered in culture, using Verwoort-Schüffner medium.

b. A darkfield examination of a fresh specimen of urine collected during the first stage may show the presence of *leptospirae*.

DISCUSSION

Emphasis should be placed on the fact that no single laboratory examination has proven entirely satisfactory for the diagnosis of Weil's disease be-

L. icterohemorrhagiae

Row 1	Row 2
0.15cc 1:5 + 0.15cc antigen (1 : 10)	0.05cc 1:5 0.10cc buffer + 0.15cc antigen (1 : 50)
0.15cc 1:50 + 0.15cc antigen (1 : 100)	0.05cc 1:50 0.10cc buffer + 0.15cc antigen (1 : 500)
0.15cc 1:500 + 0.15cc antigen (1 : 7000)	0.05cc 1:500 0.10cc buffer + 0.15cc antigen (1 : 3000)
0.15cc 1:5000 + 0.15cc antigen (1 : 10,000)	0.05cc 1:5000 0.10cc buffer + 0.15cc antigen (1 : 30,000)

Row 3	Row 4	Row 5	Row 6
		Same as Row 1 (1 : 10)	Same as Row 2 (1 : 50)
		(1 : 100)	(1 : 500)
		(1 : 1000)	(1 : 5000)
		(1 : 10,000)	(1 : 30,000)
0.15cc buffer + 0.15cc antigen Control	0.15cc buffer + 0.15cc antigen Control		

L. canicola

cause of fallacies in each test. In guinea pig inoculations typical symptoms may not appear in older animals and unless care is taken to make daily temperature readings and examine the blood for spirochetes during the period of fever, false negative results may be obtained with specimens containing leptospirae. A young, healthy, white guinea pig weighing approximately 175 gm. has been found by us to be fairly satisfactory for general use. Packchanian¹⁴ suggests the use of certain species of deer mice as suitable susceptible small laboratory animals for experimental studies of icterohemorrhagic spirochetosis and for the diagnosis of Weil's disease.

The detection of leptospirae by direct darkfield examination has been sometimes difficult chiefly because in blood, the fibrils of red blood cells have been mistaken at times for spirochetes, and in urine, the spirochetes tend to become non-motile and disintegrate readily.

With the agglutination test, difficulty has been encountered at times in obtaining suitable antigens of *Leptospira icterohemorrhagiae* and *Leptospira canicola*. We make use of an untreated four to six day old culture. Meyer *et al*¹³ use formalin killed cultures, adding three drops of commercial formalin per 10 cc of culture. Brown¹⁵ adds to a broth culture of leptospirae sufficient saponin and formalin to make a final concentration of 1-1,000 of the former and 1-200 of the latter solution. This suspension is then centrifuged, resuspended in saline and bottled for routine use. For diagnostic purposes, it is best to run an agglutination test during the first or second week of illness and again a week or so later.

SUMMARY

Four additional cases of spirochetel jaundice have been found in Virginia. These bring the total number of cases reported from Richmond to eleven and in Virginia to thirteen. All of these cases were diagnosed clinically and ten were confirmed by laboratory findings.

The diagnostic procedures used in our clinical bacteriological laboratories have been given and emphasis placed upon the leptospiral agglutination-

lysis test as a valuable aid in the diagnosis of Weil's disease.

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GERIATRICS AND ITS ROLE IN OTOTOLOGY*

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The preparation of this paper was inspired *first* by the increasing number of patients of advancing age who recognized incipient deterioration and sought relief from its otological factors. This, beside the otological, required a study of the circulatory, eliminative and nutritional background for some indications pointing toward rehabilitation or at least staying further degeneration.

A second factor was the surprising foothold which the basic study of geriatrics and its brilliant avenues of promise had obtained throughout the world, and the absorbing interest which had been taken by both younger and older generations in organized service as well as individual research.

In the ophthalmologic field, rapid progress has already been made in every department.

In otolaryngology, the accessory sinuses, with the present conservative trend, the rhinopharyngeal tract, through the brilliant work of Crowe and his associates, and indefatigable studies of the pharyngeal lymphoid tissue elsewhere, laryngeal diagnosis and surgery—have reached a rather conclusive stage. Malignancy has been controlled but not yet conquered to the same degree as tuberculosis and specific disease.

In otology, middle ear infection has been subdued, partly due to biochemic advance, but progressive deafness, a major geriatric problem, is far from being solved, and that in spite of concentrated research effort.

An effort will be made to present the problem clearly as the major one in this field for patients of maturing age, and not confuse the issue too deeply in the bewildering terms of osseous dystrophy, halisteresis and osteoporosis.

Historically, geriatrics does not present a new field, as all of you who have labored through Cicero's famous oration will agree, although it has been usually developed under some such composite title as problems of the aging. Most articles of recent importance have appeared within the past five or six years. The coining of the word was claimed by Nascher in 1909¹, whose formal publication, "Geriatrics; Diseases of

Old Age and Their Treatment," appeared in 1914². It is at least refreshing to have such a dignified title instead of "senility" so often carelessly applied. It is a matter of regret that this contribution could not have been a bit of definite research to have been offered this society. Lack of time and adequate material force this part of the paper to be a collaboration for which references of recent interest will be appended.

The writer's attention was first stimulated by a famous address of Pepper³ before the College of Physicians, some two years ago, in which he electrified his audience of varying ages by the statement that blood pressure, tobacco, and alcohol moderation were not of so much consequence to the older man as unwise difference in marriage age and dietary indulgence. Rather curiously, conversation after this lecture brought out the fact that many did not even know what "geriatrics" meant.

Bortz⁴ has cited these rather interesting facts, somewhat refuting Carlisle's essay in 1819, which placed sixty as the age of beginning senescence. Lord Balfour retired at sixty-five but returned to active duty at seventy-two; Sarah Bernhardt gave one of her greatest performances at seventy; Cato took up the study of Greek at eighty; Goethe completed Faust in his eightieth year; Thomas Edison was active at eighty-five; Titian painted one of his greatest pictures at ninety-eight; the best instruments of Stradivarius were made after ninety. Perhaps to this might be added the active longevity you all have noted in our Supreme Court. It was the writer's pleasure, while delivering an address on "Lateral Sinus Thrombosis" before this Society as Dr. Hunter McGuire's guest at Winchester, many years ago, to form a delightful friendship with one of Richmond's older otolaryngologists, even then a geriatric representative, perhaps little known to the younger generation—Dr. Joseph A. White—whose golf score, though many years the senior, was appallingly better and

2. Nascher, I. E.: *Geriatrics—Diseases of Old Age and Their Treatment*. Blakiston, Philadelphia, 1914.

3. Pepper, O. H. Perry: *Medical Problems of Advancing Age*. Lecture before College of Physicians, Philadelphia, November 17, 1939.

4. Bortz, Edward L.: *Management and Treatment of the Aged*, from *Treatment in General Medicine*, edited by Hobart A. Reimann, F. A. Davis Co., 1939.

*Read before the Virginia Society of Ophthalmology and Oto-Laryngology, May, 1941.

1. Nascher, I. L.: Article in *New York Medical Journal*, August 21, 1909.

who was still following the hounds and leading the younger cotillions.

Contrast the above enumeration with these quotations from Stieglitz⁵, Dublin⁶, Piersol⁷ and others. The average duration of life of the ancient Roman citizen was from twenty to thirty years. Life expectancy in the seventeenth century had only reached 33.5 years. The mean length of life in Sweden, a distinctly athletic country, between 1755 and 1776 was only 34.5 years. A decade after the Declaration of Independence, the mean life period in America had only increased a year, and by 1850, life expectancy in New England was but forty years.

By 1900, longevity in the United States had increased to forty-eight years and by 1930 to sixty years. Dublin⁶ has estimated, by projection, that by 1980, forty years hence, only 26 per cent of the population would be youths under twenty, and 40 per cent of our population would be over forty-five years of age. This statistical information must have been invaluable as an insurance guide. A little reflection will show the future numerical contrast in the specialties of pediatrics and geriatrics.

Much of value has been published in recent years upon this topic, as, for example, that of Cowdry⁸ on "The Problems of Ageing; Biological and Medical Aspects" with an introduction by Dewey and twenty-five important contributors; the papers presented by Piersol, Boas⁹ and others before the New York Academy of Medicine the past year; the important symposium staged at the University of Pennsylvania Bicentennial, presented by Brooks¹⁰ on Surgical Aspects, Dublin on Statistical and Social Implications,

Karsner¹¹ on Involutional Changes in the Cardio-Vascular System, and Pepper¹² on Medical Aspects. These voluminous surveys, together with the National Research under the Public Health Service, have placed at your disposal a wealth of medical, surgical, pathological and statistical information and should enhance the treatment and protection of this group of people which may soon represent over 22,000,000 people. Discussion of the earlier work of Warthin and others, and the splendid clinical investigations and laboratory research going on today, must be largely omitted.

Dr. Stieglitz¹³, in charge of the investigations in Gerontology by the National Institute of Health, differentiates "Gerontology, the problems of old age", from "Geriatrics, the diseases of the aged and consequences of senescence." He divides the problem of aging into three major fields:

1st. The biologic as a process.

2nd. Clinical problems of aging and diseases of advanced age.

3rd. Socio-economic problems of shifting age distribution.

Physiologic age is not synonymous with chronologic age and senescence cannot be measured by chronologic age.

Inasmuch as pathology is the connecting link between the generalized subject of Geriatrics and its specialized application to clinical otology, it is rather appropriate to discuss this basic pathology first.

Piersol⁷ considered that the most helpful records of group studies on patients over sixty years of age came from the clinics of Barker and his associates. They reported that chief complaints were referable to the nervous, digestive, circulatory and locomotor apparatus. There were relatively few whose outstanding symptoms suggested diseases of the respiratory tract, the blood itself, the urogenital tract or the endocrines. Cardio-vascular disease, disorders of the nervous system and diseases of bones and joints occurred in that order of frequency.

11. Karsner, Howard D. (Professor of Pathology and Director Institute of Pathology, Western Reserve University): Involutional Changes in the Cardiovascular System. Part of Symposium on Medical Problems of Old Age, at Bi-Centennial of University of Pennsylvania, Philadelphia, September 17, 1940, University Press.

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6. Dublin, Louis I., Ph.D. (Vice-President and Statistician, Metropolitan Life Insurance Company, New York City): Statistical and Social Implications, part of a symposium on Medical Problems of Old Age, at Bi-Centennial of University of Pennsylvania, Philadelphia, September 17, 1940, published by University Press.

7. Piersol, George M.: The Problem of Aging. *Bulletin of the New York Academy of Medicine*, September, 1940, Vol. 16, No. 9.

8. Cowdry, E. V.: Problems of Ageing; Biological and Medical Aspects. Williams & Wilkins Co., Baltimore, 1939.

9. Boas, Ernst P.: Aging of the Cardiovascular System. *Bulletin of the New York Academy of Medicine*, October, 1940, Vol. 16, No. 10.

10. Brooks, Barney (Professor of Surgery, Vanderbilt University): Surgical Aspects. Part of Symposium on Medical Problems of Old Age, at Bi-Centennial of University of Pennsylvania, Philadelphia, September 17, 1940. University Press.

Pepper³ found that senescence was physiologic, whether we liked it or not, and this included certain loss in weight, height, osteoporosis of bone and atrophy of cartilage. While old patients responded to surgery better than medicine, nursing was more important than either. Medication should be guarded, particularly peculiarities in the reception of certain drugs, such as morphine and atropine. Obesity, strain, maladjustments in marriage, should be avoided; food intake should be 10 per cent less; chewing apparatus, feet and skin should be policed. Some authors, however, observed that dietary restrictions in the aged were based on fear and habit, rather than research.

Karsner¹¹ has offered valuable suggestions as to involuntary changes in the cardio-vascular system; involution or retrogressive changes in aging are distinct from the diseases appropriate to the age. In studying the principles of wear and tear, the destructive effects of friction do not customarily find their counterpart in living organisms. Many of the phenomena called wear and tear are but end results of deteriorating processes initiated by infection.

In 400 autopsies, Aschoff found no deaths attributed solely to old age, and, according to Karsner, such was not recorded in 19,000 autopsies on people of varying age at the Western Reserve University. It is in a certain degree comforting that we shall not die simply from old age.

In a recent contribution on "Neurologic Problems Past Fifty", the enumeration of which is not particularly germane to this discussion, Moore¹⁴ has made two important observations. "When those diseases which ordinarily occur in the earlier decades of life make their appearance at the age of fifty, the symptoms and signs are frequently altered or so different as to cause many commissive and omissive errors in diagnosis. Among the vascular and degenerative diseases, some of the commonly anticipated conditions may stimulate, disguise or occur concurrently with other disease entities not usually suspected."

We are in a vitamin age—all have seen the immediate effects of vitamin B complex in certain types of deafness; vitamins A and D in infections of the external and middle ear. Covell¹⁵ has proven the ef-

fects of avitaminosis on various otologic structures and function in careful animal experimentation. It is unfortunate that the commercialized and expensive dosage has not and cannot be prescribed and directed in human patients with more than moderate accuracy.

In personal clinical studies, or in laboratory investigation, the otologist would do well to review the four groups of involuntary processes, from embryonic life to death, pointed out by Piersol⁷:

1. Numerical atrophy (loss of the power of cell division).
2. Quantitative atrophy (reduction in the size and number of parenchymatous cells).
3. Shrinking and condensation of intercellular substance.
4. Vascular changes (vessel collapse and obliteration of lumen).

Such changes furnish a valuable guide in determination of reconstructive and nutritional direction of the ear-sick patient. The study must not only include morphologic changes in the hearing apparatus but replacements of trophic deficiency and appropriate therapeutics.

Perhaps this will furnish sufficient pathologic background for study of the obvious symptomatic ear reactions.

Otology of the aged presents three pictures of interest: (1) Disturbances in the external ear, canal and auricular integument; (2) the long continued middle ear discharge of chronic otitis media, and (3) the somewhat baffling symptom-complex of progressive deafness. Perhaps it is not presumptive to touch lightly upon the first two, give chief place in the Geriatric tribunal to the last, progressive deafness.

1. *External* otitis is a common offender. Eczema and furunculosis in their variations have ever been present. Therapeutic measures are similar in every age, however, with certain reservations—absorption and elimination are sluggish in sclerotic tissues and those with beginning atrophy; in the aged sensations to pain, heat and cold are less acute. Safe limits in traumatism and topical applications must be selective. An otologist realizes how quickly a traumatized auricular canal will ooze and how slowly this will cease,—how readily traumatic blebs will appear on an induced tympanic myringitis. Therapeutic agents parallel the patient's age in sluggish response. Probably telangiectatic and angio-neurotic

14. Moore, Matthew T.: Neurologic Problems Past Fifty. *Penna. Med. Jour.*, November, 1940.

15. Covell, W. P.: Pathologic Changes in the Peripheral Auditory Mechanism Due to Avitaminoses. (A, B Complex, C, D, and E), *The Laryngoscope*, Vol. L, No. 7, July, 1940.

changes present the most baffling physiologic disarrangement to manage, and here again sedation must be guarded and both systemic and topical medication cautious. Abrasions heal slowly—absorption in even minor surgery is protracted. Even peripheral disturbances are consequential in the constant watch for initial malignancy.

2. Fascinating subject that it is, infection of the middle ear, comprising, as you know, the eustachian tube, tympanum and mastoid, can likewise receive but passing attention. According to Wittmaack's view, the two types of infantile otitis media have had much to do with both mastoid pneumatization and its later pathology. The role of squamous epithelium in relation to cholesteatomata has been impressive and is generally a sequence of tympanic perforation. The cautious otologist, in planning his middle ear campaign, must study these types of perforation—lateral wall, central and attic; the first, productive of cholesteatoma; the second, rather automatic in its self determination, and the latter a true geriatric problem if it has occurred in the neighborhood of the stapes.

Middle ear infection in its relation to deafness is focally consequential, but is not entirely appropriate to this discussion, which would travel from the surgical, X-ray and radium measures in the nasopharynx, through the middle ear and at least the antrum of the mastoid, and leave one stranded in the polymorphous maze of retraction, adhesion, sclerosis and ankylosis of the ossicular chain. The watchword in middle ear suppuration is free and adequate drainage. Even aged patients will usually bear well whatever local or general anesthesia is necessary in obtaining this. Reserve topical measures, iodine powders, ionization, etc., for the follow up. It will be noted that middle ear infections of the aged are a sequence of infantile and youthful dyscrasias, rather than *de novo* geriatric.

3. *Progressive Deafness and Otosclerosis.* This is the vital syndrome in the problems of aging—and its nature, medical and surgical therapeutics, and economic management—the goal of this geriatric preamble.

Otosclerosis and progressive deafness are not synonymous titles, though frequently so regarded. Otosclerosis does present one type of progressive deafness, but progressive deafness need not be otosclerotic. It might be adhesive in the middle ear or perceptive in cochlear degeneration.

In recent months, speakers have courageously classified three types of deafness, which might almost be crudely represented diagrammatically—anterior, middle and posterior:

1. Conductive, the property of the component parts of the middle ear.
2. The progressive osseous change in the labyrinthine capsules termed otosclerosis, and
3. Changes in the cochlea and perceptive apparatus, usually degenerative (or schematically visualized— anterior conductive, middle otosclerotic, and posterior nerve degenerative).

Consensus of opinion has established rather definite etiology for these three types: Conductive deafness (including the adhesive and retracted middle ear): from the nasopharynx and eustachian tube. Otosclerosis: familial transmission, toxemia, infections, adolescence and the pregnancy complex. Perceptive or Internal Ear Deafness—traumatism and neurologic influence from the higher centers.

Nager¹⁶, whose laboratory procedures have always represented simplicity as well as finality to visiting otologists, studied over 1,100 cases of otosclerosis, and found that the disease began in 50 per cent of all cases between sixteen and thirty years, and in 14 per cent prior to that age.

Otosclerotic pathology presents a deep and involved study. While the osseous changes, linked to the atypical cartilaginous development in fissula ante fenestrum and fossula post fenestrum, are usually linked to the labyrinthine capsule and stapes base, they may involve and even fill the scala tympani, and in exceptional cases include the semi-circular canals.

The classic definition of Cahill¹⁷ still pertains: "Otosclerosis clinically presents an ankylosis of the stapes, progressive deafness usually bilateral, and a severe tinnitus, yet with normal membranes and patent eustachian tubes. It must satisfy the Bezold triad of lengthened bone conduction, a negative Rinne test and elevation of the lower tone limits, and there should probably accompany it the paracusis of Willis, meaning the ability to hear conversation better in the presence of a noise, and the

16. Nager, F. R.: Clinical and Pathologic Anatomy of Otosclerosis. *Acta Otolaryngol.*, 27:542, 1939.

17. Cahill, H. P.: Otosclerosis. *The Nose, Throat and Ear and Their Diseases.* Jackson & Coates, Philadelphia, W. B. Saunders Co., 1929, p. 503.

pinkish tinge over the promontory, representing the active underlying osteoporosis."

This is a perfect "tabloid" symptomatology. If the old country physician could practice medicine with only Dovers' powder and calomel for drugs, the otologist has a dependable library on this phase of progressive deafness in the single extended paragraph.

In spite of the rather hopeless picture of otosclerosis pervading the medical mind, four important things have happened in recent times:

1st. Fistulization: Surgery has definitely demonstrated that in typical otosclerosis with preserved bone conduction, hearing is really there, though temporarily locked up. The long deafened patient's recognition of this on the operating table is absolutely dramatic.

2nd. The observation studies of Crowe¹⁸ and his associates upon 15,000 patients, 3,000 of them children, has been convincing that progressive deafness usually commences in the middle ear, and the perceptive or internal ear group hold a far smaller percentage in the total than usually supposed.

3rd. The loudness balance technique and masking of tinnitus has contributed much in the differentiation of nerve lesions, under the development of Fowler¹⁹, Hughson²⁰ and others. In the introduction to a forthcoming abstract review of Progressive Deafness and Otosclerosis, your speaker has awarded the 1940 Oscars, "a la Hollywood," to—

1st. Advances in loud balance technique and tinnitus analysis;

2nd. The clarified management of pharyngeal and tubal lymphoid tissue;

3rd. Precisional understanding in the use of the newer biochemic remedies, and

4th. The Covell studies in avitaminosis.

In the analysis of tinnitus, which invariably increases deafness, two types have been recognized—the vibratory and the non-vibratory. The first masks easily and the second with difficulty. An elaborate technique, however, has been developed, which has permitted an accurate interpretation of central deaf-

ness, and incidentally has indicated what types of deafness could and could not be relieved. Further study will show the absence of conflict between Crowe's view on perceptive deafness and the Beasley conclusions from the National Health Survey on deafness as to the preponderance of nerve deafness, which is contrary to the popular belief. Perhaps there has not been a clear differentiation between otosclerosis and perceptive deafness.

Research studies, notably on the Western Coast, have presented a challenge that otosclerosis may be reversed, under non-surgical therapeutics, notably vitamins, nutrition, calcium and phosphorus.

You will agree that this arch invader of human hearing, otosclerosis, whether numerically isolated in laboratory research or comprehensively combined with other types of progressive deafness, and that in spite of the youthful invasion maintained by Nager, is the real aging problem in otology.

To make the picture complete, it would seem appropriate to tabulate relief measures in deafness in a generalized way:—

1st. Systemic reorganization, biochemical help, dietary regime, psycho-analysis.

2nd. Conclusive research study of the newer agents, thyroxin, prostigmin, estrogenic substances, endocrines, vitamins and certain specific medication.

3rd. Fistulization or fenestration by the Sour-dille, Holmgren and Lempert methods; closure of the Round Window by the Hughson technique; general surgical control of infection.

4th. Every type of mechanical hearing appliance and their adequate prescription.

Sufficient material would seem to have been presented in the foregoing to adequately suggest the etiology, pathology, symptomatology and therapeutics of the otologic phase in geriatrics, to one interested in such specializing. Enough attention has hardly been devoted to the surgery of the aged.

Barney Brooks²¹ has contributed elaborate studies on the results of surgery in persons of advanced age, including operations upon otolaryngologic patients in the higher age groups. He has stated that in the group of 293 operations on patients over seventy years of age "it appears that surgical diseases in the higher age groups are associated with a relatively high mortality but the deaths which could reason-

18. Crowe, S. J.: Recognition, Prevention and Treatment of Hearing Impairment in Children. *The Laryngoscope*, Vol. L, No. 7, July, 1940.

19. Fowler, E. P.: Head Noises. Significance, Measurement and Importance in Diagnosis and Treatment. *Arch. Otolaryngol.*, Vol. 32, No. 5, November, 1940.

20. Hughson, W., and Witting, E. G.: Estimation of Improvement in Hearing Following Therapy of Deafness. *Ann. Otol., Rhinol. and Laryngol.*, Vol. 49, No. 2, June, 1940.

21. Brooks, Barney: Surgery in Patients of Advanced Age. *Annals of Surgery*, April, 1937, pp. 481-495.

bly be attributed to operative treatment are remarkable infrequent."

The speculation by Brooks upon the effects of shift in the age composition is of interest. In general, the obstetricians and pediatricians could anticipate a diminution in number of births and children; internists could look forward to an increase in the incidence of degenerative diseases; general surgeons could look for an increase in their responsibility because of later incidence of surgical disease; the urologists would be busy with a larger group of old men, but the gynecologists would probably not be seriously over-worked with their even larger group of old women; ophthalmologists might look forward to performing many operations for cataract but the otolaryngologists would do relatively few operations on ear, nose and throat to compensate for diminution in tonsillectomies and adenoidectomies; the orthopedist is already aware of the decrease in tuberculosis; the neurologic surgeon may expect increase in number of tic operative cases and the plastic surgeons reconstruction after epitheliomata, but fewer operations for harelip and cleft palate. The internist's function assumes greater proportions. It devolves upon him to determine proper preparation of these aged patients for the combination of trauma, drugs, confinement, strange environment, irregularity in nutrition and emotional upset constituting a surgical operation.

Returning to Brooks'²¹ general discussion.

With an increase in people of sixty-five years of age, there will be not only an increase in higher age diseases, but an increase in the number of advanced age patients suffering from all age diseases. With the increased higher age limit, there would be more operating surgeons of advanced age, until a sympathetic public has decreed his retirement. Surgery itself is in a period of expansion, not only in new operative procedures for new conditions but also for old conditions that were not previously considered surgical. Political interest in medical and surgical care for the aged and old age pensions are increasing.

The writer finds himself in agreement with the opinion that the older person can now be operated with increasing safety, with greatly improved pre-operative and post-operative safeguards. Anesthesia of every form, with gentle administration, is increasingly more safe. The tissue reaction is less sensitive, and shock thereby diminished. Hemorrhagic conditions can be controlled by previous study and emergency safeguards. Absorption and recovery are slower and that forces a delicate judgment as to what is justifiably necessary in surgery.

Now, in conclusion, let us consider the role of the otologic geriatrician whose practice bids fair to supercede in years to come that of the pediatrician.

An eminent statesman physician discussed with a group, some twelve years ago, the phases of successful medicine—dividing it into the art of medicine, the laboratory of medicine, and the priestcraft of medicine. To a similar group of medical students quite recently, he said he must re-classify medicine of today and tomorrow with two groups—the priestcraft of medicine and preventive medicine. Guardedly this applies to the field in discussion.

First, and foremost, the specialty of advanced age otology requires the otologist to also be in degree an internist and his priestcraft judgment, tact and gentleness must still guard the economic readjustment as well as otologic welfare of his patient. There are many fields of research wide open—arterio-sclerotic, fibrotic and osteogenetic activity in the aging process; drug idiosyncrasies; further clinical studies on ciliated activity; allergic reaction, focal infection, fluid balance in the maturing patient. The management of psychic imbalance, sexual idiosyncrasy, and the various phobias offer another field.

Above all, and finally, it must be remembered that we are discussing a period of life which requires the most refined art of medicine, rare experience in diagnostic ability, exquisite skill in therapeutics, and, again emphasized, most careful judgment as to justifiable surgery in the field of otology.

1912 Spruce Street.

HAVERHILL FEVER FOLLOWING RAT BITE

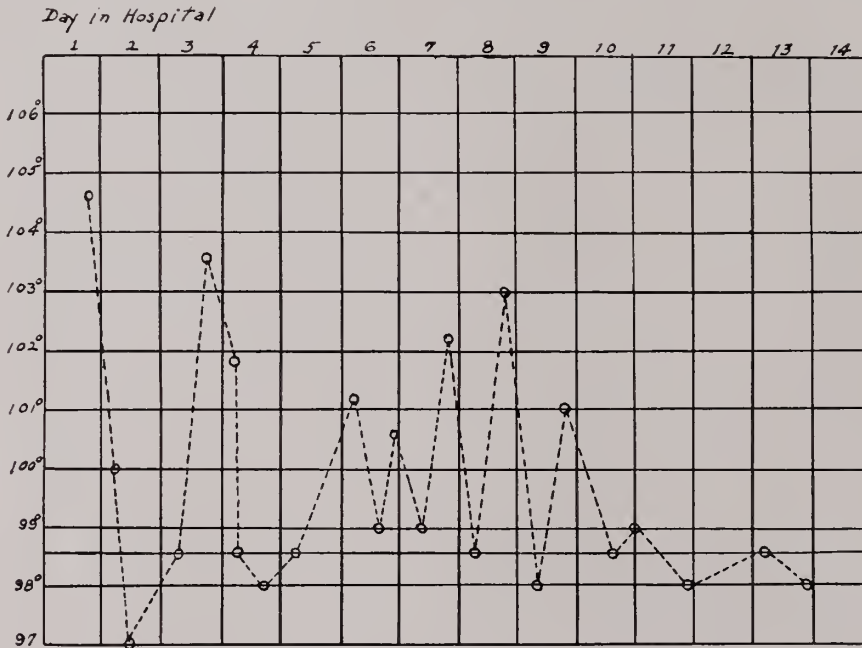
ANDREW D. HART, JR., M.D.,
Charlottesville, Virginia.

Haverhill Fever^{1,2} is an acute infectious disease accompanied by symptoms of sepsis and identified by evidences of generalized infection with the bacterial organism *Streptobacillus moniliformis*. The only epidemic of the disease that has been reported¹ was due to a milk-borne infection, possibly through a contamination of the milk supply by rats. Sporadic cases have been described following the bite of various animals, most commonly the rat. Investigations³ have shown that the common rat (*mus decumanus*) harbours the organism *Streptobacillus moniliformis* in its nasopharynx in a relatively high percentage of instances.

This history was verified by an almost indisputable description of the event and equally plain evidences in the wound. A roommate, attacked the following night, showed similar local lesions but developed no further disease.

On admission, physical examination revealed prostration without shock. The temperature was 105.6; the pulse 120; respiration 20 per minute; a white blood cell count was 23,200. No other findings of importance were present.

COURSE OF THE DISEASE:—During the first week of hospitalization the patient remained septic and moderately ill. His temperature showed remissions



TEMPERATURE CHART

Figure 1.

REPORT OF CASE

J. A. B., an eighteen-year-old college student, was admitted to the University of Virginia Hospital on December 11, 1940. He complained of fever and chills of twelve hours' duration. Three nights before admission he had been bitten on the nose by a

and exacerbations as illustrated in Figure 1. Generalized joint pains developed, without specific physical involvement of any joint; the knees were painful on motion but no swelling occurred. On the sixth day a maculo-papular, morbilliform eruption appeared on the face and on upper and lower extremities. This rash was almost indistinguishable from that commonly described in Rat Bite Fever (Sodoku) due to infection with *Spirillum minus*.

*From the Department of Student Health, University of Virginia School of Medicine, Charlottesville, Va.
Read before the Virginia Section of the American College of Physicians, March 13, 1941.

By the tenth day it had largely disappeared, concomitantly with general symptoms and with the febrile reaction. On the seventh day of hospitalization 0.3 gram of neoarsphenamine were given intravenously, without appreciable immediate effect. The patient was discharged from the hospital on December 23, 1940, twelve days after admission. Subsequent observation revealed no return of symptoms or signs.

LABORATORY:—As noted, the initial white blood count was 23,200. Subsequent counts showed a gradual subsidence to normal figures. Differential blood counts and blood smears showed no distinct abnormality. Examination of the blood by Wright stained smears and by darkfield illumination was performed on the night of admission and showed no evidences of spirochaetal or malarial parasites. Subsequent darkfield examinations of cutaneous lesions showed no spirillum minus organisms. Weil's disease was excluded by appropriate studies.

A mouse inoculated on December 11 did not become sick; when examined two weeks later, smears from the heart's blood showed a few streptobacilli. Mice inoculated with venous blood taken at the height of the infection (12-18-41) developed characteristic evidences of sepsis⁴ from *Streptobacillus moniliformis*—malaise, arthritis; and after death, positive smears, and cultures that grew colonies morphologically and bacteriologically characteristic of *Streptobacillus moniliformis*. On the tenth day of illness the patient's blood serum showed agglutinins against the isolated strain of streptobacilli organisms in dilutions of 1/10 to 1/40 to 1/80 (with two antigens). A control test with normal blood was negative. A guinea pig inoculated on the night of the patient's admission to the hospital (12-11-40) died one month later. Smears from the ascitic fluid showed many streptobacilli.

COMMENT

Generalized infection with *Streptobacillus moniliformis* (*Streptothrix multiformis*, *Streptothrix muris ratti*, *Haverhillia multiformis*, *Actinomyces muris*) has been recognized since an original description by Schottmuller⁵ in 1914. Since that time, sixteen sporadic cases have been reported, the majority following rat bite. Five additional cases have been described in which there was probably a mixed infection with *Spirillum minus*, the cause of Rat-Bite Fever (Sodoku).

In 1926 an epidemic¹ occurred in Haverhill, Massachusetts, which affected eighty-six persons; in twelve of these a *Streptobacillus* organism was isolated² from the blood or joint fluid. A comprehensive review of the pertinent literature on this subject has recently been published by Farrell, Lordi, and Vogel.⁶

Haverhill Fever following animal bite is to be distinguished from the clinical syndrome of Sodoku or Rat-Bite Fever, which occurs perhaps more frequently in sporadic instances. Since 1916, when its

TABLE 1.—CLINICAL DIFFERENCES IN HAVERHILL FEVER AND SODOKU

	HAVERHILL FEVER	SODOKU (RAT BITE FEVER)
Infesting organism	----- <i>Streptobacillus</i>	-- <i>Spirillum</i>
Portal of entry	---Animal bite--- milk borne	--Animal bite
Incubation period	Short, 2-10 days	Long, 10-20 days or more
Wound healing	Prompt, as rule	Induration and adjacent lymphadenitis
General symptoms	Prompt, severe	--Delayed--less severe
Arthritis	-----Common	-----Rare
Rash	-----Morbilliform, petechial	-----No petechiae
Leukocytosis	----Marked	-----Slight
Treatment	-----Not established	--Arsenic

etiology was proven by Futaki,⁷ 111 cases of Sodoku have been reported. The chief clinical differences between the two infections have been summarized in Table 1. Since a mixed infection may occur, the possibility of ambiguous observations must be kept in mind. This point has been emphasized by Allbritten,⁸ in a recent extensive review of the available data on published cases of both types of infection.

The ultimate differential diagnosis of relapsing fevers following animal bite depends, as in other instances, on laboratory studies. The accompanying outline of procedures (Table 2) is taken directly from the published paper of Allbritten, Sheely, and Jeffers.⁸ In uncomplicated cases the diagnosis should not be difficult. Acute infectious arthritis, rheumatic fever, and undulant fever must be considered. It may be necessary to exclude Weil's Disease and Relapsing Fever. The history is extremely important.

A specific treatment for Haverhill Fever has not been established. Arsenic preparations have been reported to be of benefit in some instances. Thymol

TABLE 2.—LABORATORY DIAGNOSIS OF HAVERHILLIA MULTIFORMIS AND SPIRILLUM MINUS INFECTIONS

PROCEDURE	SPIRILLUM MINUS	HAVERHILLIA MULTIFORMIS
Blood culture	No growth on ordinary mediums	Draw blood at height of fever; add to beef bouillon: characteristic growth in 24 to 96 hours; ascitic fluid or serum enrichment of mediums needed for all sum cultures
Animal inoculation	Inoculate mice and guinea pigs intraperitoneally with 2 cc. of citrated blood or material aspirated from bite wound or adjacent enlarged lymph node; daily dark field examination of inoculated animal's blood for <i>Spirillum minus</i> ; if <i>Spirillum minus</i> is found before 5th day, it is probably a natural infection	Inoculations with patient's tissue fluids give negative results; inoculations of cultures into mice result in polyarthritis and death; not pathogenic for rats and guinea pigs
Tissue fluids	Dark field examination of patient's blood; serum from wound or involved lymph node (rarely positive); stained preparations of tissue fluids by Wright's, Giemsa's or Fontana's stain (rarely positive)	Centrifuge joint fluids and examine smears; take culture of joint fluid in ascitic or serum bouillon
Serologic reaction	Technically difficult and of questionable value	Positive agglutination, precipitin and complement fixation may offer confirmatory evidence

Taken from Allbritten, F. F.; Sheely, R. F.; and Jeffers, W. A.: *Haverhillia Multiformis* Septicemia: Its Etiologic and Clinical Relationship to Haverhill and Rat-Bite Fevers, *J.A.M.A.*, Vol. 114:24, June 15, 1940.

has been used⁶ with questionable results. In the case described in this report recovery was thought to have occurred independently of any medication.

SUMMARY

1. An instance of Haverhill Fever following rat bite is reported.
2. Considerations involved in the occurrence, and diagnosis of the disease have been discussed.
3. An effort has been made to further clarify the nature of infections following animal bite.

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OVARIAN PREGNANCY

A Review of the Literature and a Case Report*

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Mercerus and St. Meurice in the seventeenth century first described ovarian pregnancy, but in 1835, Velpena concluded that all purported ovarian pregnancies reported up to that time gave inconclusive evidence, and, consequently, could not be classed as such. That these cases were dermoid cysts is the conclusion of authorities¹. It was not until 1899 that VanTussenbroek produced strong evidence, and Thompson, three years later, gave indubitable proof of the existence of ovarian pregnancy².

Wollner in 1932 reviewed the literature; and from eighty-seven cases studied, could cull only forty-eight undeniable examples³. Eight years later in 1940, Russell and Black were able to add only four more, including one of their own, bringing the total to fifty-two. Since the work of Russell and Black, we have been able to find only seven additional ovarian pregnancies, including one of our own^{9,10,11,14,15}, which makes an aggregate of fifty-nine.

The case of Spears deserves especial notice since there was a simultaneous rupture of an ovarian cyst in the other ovary at the time of the rupture of the ovarian pregnancy⁷. Pudney's case concerned a simultaneous occurrence of left ovarian and right tubal pregnancies. Milner and Bowles reported concurrent right ovarian and intrauterine pregnancies¹⁵.

Obviously this clinical entity is rare, and each additional proved case deserves reporting.

To be labeled undeniably an ovarian pregnancy, each one must meet four requirements:

- (1) The tube on the same side must be intact both macro- and microscopically.
- (2) The fetal sac must occupy the site of the ovary.
- (3) It must be connected to the uterus by the ovarian ligament.
- (4) Ovarian tissue must be found in the sac^{1,2,3,4}.

It is felt that the following case report meets all the above criteria:

Mrs. E. T., a forty-two-year-old, divorced, white female, entered the Philadelphia Lying-In Hospital on November 6, 1939, on the Welfare Service. At that time she complained of L.L.Q. pain of two months' duration. Two months prior to admission, not having missed any menses, she suffered a severe attack of L.L.Q. pain radiating to her rectum and followed by marked vertigo. There was no syncope. Since the initial pain episode, there have occurred occasional mild attacks of L.L.Q. pain without radiation. Her L.M.P. was October 29, 1939, and for the past six months she has had increasing menorrhagia without prolongation.

Her past history was irrelevant.

Marital and Menstrual Histories: She was married at twenty-one years of age, now divorced. She had two full-term pregnancies followed by easy spontaneous deliveries. Her menarche occurred at eleven years, menses were always of the twenty-eight-day, four-five-day type with slight cramps. There had been no leucorrhea.

The gastrointestinal and cardio-respiratory-vascular histories were negative. Her urinary history revealed frequency without other symptoms.

Physical examination: T 98.6, P 84, R 20, BP 128/70. She was a well developed and nourished, slightly obese, white female, lying flat on the table, in no pain. Age forty-two years. *Her head, eyes, ears, nose, mouth, throat, neck, chest, breasts, heart, and lungs* were essentially negative. Abdominally could be felt a soft, non-tender, irregular mass coming from the pelvis and reaching to two fingers' breadth above the symphysis in the midline. Bimanual pelvic examinations revealed a parous introitus, no pathology of the glands, a lacerated pelvic floor, and a slight rectocele and cystocele. The cervix was posterior, firm, free, irregular, and contained frequent Nabothian cysts in the anterior lip. The uterus was irregularly enlarged to the size of a two and a half to three months pregnancy, soft, free, non-tender, and

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anterior. Adnexa: the right side was negative; the left side contained a fixed, firm, non-tender oblong mass the size of a gall-bladder and apparently continuous with the uterus. --

Laboratory work: On November 7, 1939, the hemoglobin was 65 per cent, the rbc 4,700,000; the wbc 8,350; and the Wassermann was positive; the urine was straw colored, acid, specific gravity 1.016, sugar and albumin negative.

The diagnosis was (1) uterine fibroids complicated by a possible left ectopic pregnancy and a chronic endocervicitis. Since the pregnancy was doubtful, a Friedman was done and reported negative. Consequently, on November 10, 1939, a dilatation and conization of the cervix, bilateral salpingo-oophorectomy, supravaginal hysteromyomectomy and appendectomy were done. At operation was found, in addition to the fibroids, a twice normal size left ovary containing a hemorrhagic area the size of a fifty-cent piece hollowed out in the center. The left and right tubes and right ovary were apparently normal. The left tube was not adherent to the ovary. In the cul-de-sac were found an old organizing blood clot the size of a plum and a degenerating fetus about 5 cms in length. The fetus unfortunately was lost between the operating room and the pathology laboratory. Postoperatively the patient's course was uneventful except for a mild postoperative reaction and on the eighth day a mild parametritis. She was discharged on the fourteenth postoperative day, having been up and about the ward for two days. Examination on discharge revealed a well-healed abdomen, a well-suspended but slightly fixed cervix, and a moderate thickening without tenderness in the parametria.

The pathological report was as follows: left ovary with large clot attached without epithelial lining between the two, in the clot were areas of degenerated fetal villi with some of the cellular elements still present; the left tube was larger than the right with longer and more edematous papillae and a few areas of squamous epithelium in the stroma; right tube and ovary normal; uterus contained multiple fibroids; and the appendix was normal.

Diagnosis: (1) Ovarian pregnancy, old, left.

(2) Uterine myomata.

(3) Normal appendix.

(4) Normal right tube and ovary.

COMMENT

Ovarian pregnancy may be divided into two types: (1) intrafollicular and (2) superficial; or primary and secondary. In the primary, the fertilized ovum undergoes its entire growth in the ovary; in the secondary, the fertilized ovum undergoes its early development in some nearby structure or cavity as the salpinx, and then becomes implanted on the ovary. Obviously only the primary type can be classified as a true ovarian pregnancy.

Macroscopically, due to their close resemblance, it is difficult to distinguish ovarian pregnancy from chocolate cyst commonly called endometriosis. In the intra-follicular or primary type, there is a little tendency to rupture—to which tenet I cannot subscribe—since the ovarian connective tissue is stimulated by and soon surrounds the ovum. Later the ovum dies because of hemorrhage in the fetal sac wall and chorion frondosum producing a pocket of old, dark blood which is grossly identical to a chocolate cyst.

As stated before, I cannot believe in the conception that primary ovarian pregnancies have little tendency to rupture. Every reported case, except one¹², and my own, reviewed by me, had ruptured before operation and during the first trimester of pregnancy.

The etiology of ovarian pregnancy in addition to the etiology of ectopic gestation as a whole has two theories: The first is based on the rupture hole of the follicle being plugged by a blood clot. This clot would obviously keep out any spermatozoon as well as keep in the ovum. The other is based on a slow rupture of the follicle whether it be due to a too thick tunica albuginea or low fluid pressure within the follicle. In either instance there would be less tendency for the ovum to be expelled. For a more detailed explanation, I refer you to an excellent article by Wollner in the *American Journal of Obstetrics and Gynecology* for 1932.

The prospects for a normal, healthy child if carried to term are illustrated by Sittner¹³. He reviewed three separate series of such cases; and in the first, of eighty-five ectopic pregnancies with viable feti reviewed, only thirty-six survived the first month; in the second, only four out of eight lived beyond the first month; and in the third, only eleven of fourteen lived. Schorsch¹³ believes only 10 per cent of ectopic feti at term can survive, and Winkel¹³ estimates that 50 per cent are malformed. The treatment of ovarian

pregnancy is extirpation of at least the offending ovary.

CONCLUSIONS

1. A case of true ovarian pregnancy complicated by uterine fibroids is reported.
2. Ovarian pregnancy tends to rupture during the first trimester.
3. Ovarian pregnancy cannot be differentiated absolutely from tubal pregnancy before operation.
4. To differentiate a primary from a secondary ovarian pregnancy, a thorough microscopic examination of the ovary and corresponding tube is necessary.
5. The treatment is operation as soon as the diagnosis is suspected and the patient is in condition.

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CERVICAL FIBROMYOSITIS AND HEADACHE*

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For many years the patient who complained of headache was, in the mind of the general practitioner, a "headache" to care for. In recent years our attention has been directed to this and that cause as being responsible for headache; thus we have the headache due to histamine hypersensitivity, there is the headache due to intracranial neoplasms, there is the "old friend" known as migraine, the headache due to eye-strain, the headache associated with sinusitis, and so on *ad infinitum*. When all known causes have been considered and eliminated, there still remain quite a considerable number of patients who complain of headache; it is about this group that we wish to discuss cervical fibromyositis as a common etiological agent.

Fibromyositis may be defined as the presence of small, discrete nodules or larger fibrous plaques in the muscle belly and in the sarcolemma. Fibromyositis, wherever it occurs, is thought by some to be the result of severe or repeated minimal trauma which brings about minute tears in the muscle tis-

sue, giving rise to these nodules. Another theory as to the etiology of these nodules is that they result from local inflammatory processes, possibly the result of the action of non-pyogenic organisms of relatively low virulence. These abnormal deposits interfere with the proper functioning of the muscle and lead to spasm which in turn leads to pain and thus to more spasm, and so on. When any marked degree of fibrositis occurs in the cervical muscles occipital headache frequently follows. Headaches of this type are intermittent in character but tend to occur during periods when the patient is under stress and strain. The patient may or may not complain of an associated stiffness in the neck; the great majority of patients will report some relief of the headache by rubbing the back of the neck. Occupation seems to bear some relation to the incidence of this condition as it is seen most often in those who do not lead a particularly active life; school teachers, office workers, university students, traveling men, and so on are frequent sufferers.

In the history, the patient will usually state that the headaches come on in the middle of the day or in

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the evening. Occasionally the patient will awaken in the morning with the headache. The pain is described as starting in the back of the neck and working upward and forward over the head (suggesting the distribution of the greater and lesser occipital nerves and the third occipital nerve). One or both sides may be affected, although it is rare to have one side only; the pain, however, is usually worse on one side than on the other. Common analgesics such as aspirin give partial relief.

Examination of the patient will clinch the diagnosis if the examiner is gentle and searching in his palpation of the cervical muscles. Where tenderness is acute it may be necessary to obtain relaxation of the muscles before the nodules may be satisfactorily palpated; the use of heat for a short time will usually suffice for this purpose. In the actual technic of palpation great care must be taken that the touch at first be light, gradually becoming deeper until the entire thickness of the muscle is palpable, yet without eliciting defensive spasm. The findings are several discrete, or, in the more advanced cases, confluent nodules or plaques which are definitely palpable in the belly of the muscle. Pressure over these nodules causes them to slip out from under the palpating finger. The patient may have much or little pain when the nodules are being palpated, but pain is always elicited when palpation is made at the time the patient is suffering from the headache. The distinction between the presence of these nodules and the presence of posterior cervical adenopathy is not difficult, as the former condition is within the belly of the muscle, whereas, the latter is relatively superficial.

Histological examination of these nodules has been made by various investigators. Their findings do not agree, probably because of the fact that the specimens for such study were obtained at different stages of reaction. It may be said, however, that these nodules are not pure scar tissue; on the contrary, they are softer and may be completely obliterated by properly directed massage.

This brings us to the consideration of treatment for this condition. It has been our experience that by means of deep heat and deep friction massage over the neck and shoulders it is possible to disrupt these nodules. There are two main objects in the treatment: First, is the relief of pain. Heat and very gentle massage will bring this about within a day or two. Second, is the prevention of recurrence

of pain. Here the deep friction massage and the actual disruption of the nodules is accomplished. Treatment is continued until palpation no longer discloses discrete nodules. This may often be accomplished within a week or ten days in the early case; in the more advanced case it may require from two to four weeks. The usual period is ten days to two weeks.

A more radical form of treatment, but in some cases efficacious, is the removal of these nodules surgically.

CASE REPORTS

Mrs. T. J., age thirty-four. First seen May 23, 1940.

Chief complaint: Pain in back of head since February, 1940. Occasional stiffness in neck.

Examination negative except for three or four small nodules palpable in the upper portion of the trapezius muscle on both sides.

Treatment: Deep heat and gentle massage every other day for four days. Pain was completely relieved, but patient was advised to have the nodules broken up. She returned on June 18, 1940, and this time she received deep heat and the deep friction massage. Four treatments sufficed to break up the nodules. The patient has been free of the occipital headaches since that time.

Miss M. P., age thirty-one. First seen on May 28, 1940.

Chief complaint: Acute wry neck, duration five days. Also gave history of recurrent occipital headaches for past several years.

Examination essentially negative except for marked spasm in upper right trapezius and sternocleido-mastoid muscles. Following heat, many nodules could be palpated in the neck and shoulders.

Treatment: Deep heat and gentle massage daily for three days, at the end of which time the patient was relatively pain free. This patient did not return for further treatment until February, 1941, when she suffered a return of the wry neck. The headaches had recurred off and on throughout the intervening eight or nine months. At this time (February, 1941) she was given eleven daily treatments and the nodules were broken up. She has been pain free since completion of treatment.

SUMMARY AND CONCLUSIONS

It is known that fibromyositis occurring in the neck is frequently provocative of recurrent occipital

headaches. The mechanism of this type of headache appears to be pain referred along the course of the greater and lesser occipital nerves and possibly also the third occipital nerve. It is thought that such nerve irritation results from spasm in the muscles, due to the presence of the fibrous nodules and plaques which have been described.

Deep heat and deep friction massage play an important role in the relief of this condition. At first, pain must be relieved by means of heat and gentle massage; after this has been accomplished, it is essential that the fibrous deposits be dispersed by means of deep heat and deep friction massage. Re-

currence of the pain is likely if the nodules are not obliterated.

Surgical removal of the offending nodules may be done, if the conservative treatment, as outlined, does not accomplish the desired result. Such a procedure is rarely necessary in our experience.

The incidence of this condition is far greater than has been generally appreciated; it is likely that a fair percentage of patients suffering with so-called "functional or nervous" headache actually fall in this group. The diagnosis is quite simple if the physician will take time to search for the offending nodules.

CHOOSING A METHOD FOR MASS X-RAYING OF SERVICE MEN

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INTRODUCTION

At least a million men are now in the Service who have not had chest X-rays made. To prevent spread of tuberculosis in the Army, Navy, and Marine Corps, therefore, it is inexcusable to induct millions more who have been proved free of the disease by X-ray films of their chests made prior to entry into the Service.

In the two Army Corps Areas where X-ray films of the chest have been made on all selectees and National Guardsmen prior to entry into Federal Service, rejections have averaged between $\frac{1}{2}$ and $1\frac{1}{2}$ per cent on X-ray findings alone. Therefore, it is estimated between 5,000 and 15,000 cases of pulmonary tuberculosis are now in the Service which should be found and weeded out at once before they have further opportunity to infect their brothers-in-arms.

The logical solution to this dilemma would be for the Government to purchase or rent as many mobile units of the rapid paper film method as may be needed to X-ray the chests of all officers and men not so examined, and also to X-ray all men prior to induction into service in the nine Corps Areas and our foreign possessions.

By this method only can we save our Government millions of dollars of taxpayers' money for hospitalization, compensation, and family allowances for those who develop tuberculosis in our Army, Navy,

and Marine Corps during the present national emergency.

Proof of this conclusion is submitted in the following analysis.

CHOICE OF BEST METHOD

We can assume that it would be impractical to make a stereo pair on 14x17 cellulose film or even a single 14x17 plate on cellulose film of every soldier and sailor in the Service and every recruit, for the obvious and well-known reasons, of cumbersome, slow speed and high cost. In this discussion, therefore, only the three rapid low-cost methods are included, namely—the 35mm and 4x5 inch photofluorograph methods and the paper film in rolls.

Each of these methods is fast enough to serve the purpose, although in the case of the 4x5 photo method there may be limits imposed by the tube upon the rate of making exposures.

The cost of equipment required for each of the three methods varies widely. The 4x5 photofluorograph unit, without stereo attachment or processing equipment, is reported to cost in the neighborhood of \$9,000. The 35mm unit is reported to cost about \$6,000. The roll paper film unit, complete with processing equipment, is said to cost about \$3,000. It may be assumed that wear and tear and depreciation on each of these units, exclusive of the tube, may be taken at 20 per cent per year.

The one item of cost which has been most prominently stressed in published articles has been that

of the raw materials used. The 35mm film is said to cost about one cent per exposure, the 4x5 film about five cents, and the paper film in rolls costs the Government twenty-five cents for each 14x17 radiograph.

This apparently wide difference in cost of film used is frequently cited as a strong argument for the use of either the 35mm or the 4x5 film. Seldom is any reference made to the importance of diagnostic accuracy when considering the final or total over-all cost of including a chest X-ray in the routine physical examination of our military men.

It has been repeatedly stated, and apparently accepted as true, that the average cost of admitting a case of tuberculosis into the military Service during the World War was somewhere around \$10,000 per man to date (the final cost will probably never be accurately known, but the bill is still growing at the rate of forty million dollars a year). This means that it would have been worth \$10,000 to Uncle Sam for each such case which could have been kept out of the Service.

There appears to be no reason to believe that the cost today in the present emergency will be any less than it was after the last war. We assume then that it is now worth \$10,000, on the average, to exclude a case of tuberculosis which would break down in Service if admitted. If that is so, that fact has an important bearing upon the selection of the method to be used in the routine examination of all Service men.

There seems to be no disputing the statement that all of the three methods are capable of disclosing gross lesions in the thorax or that most minor lesions are also discoverable. In all cases of pathology, or suspected pathology, additional studies can be made by other methods, including a stereo pair of radiographs. The unfortunate fallacy of this procedure lies in the fact that only those cases in which definite or suspicious shadows are revealed on the first film will ever receive this further study.

The question becomes—how many cases will be missed entirely by each of the three methods and therefore receive no further examination? Obviously, none of these methods, nor any other method, is capable of disclosing *all* cases of pulmonary tuberculosis on a single plate or even on a single stereo pair.

The absolute accuracy of each of the known methods of X-ray examination is, as yet, undetermined.

But many studies have been made, and ratings assigned, which express the judgment or opinion of the investigators. Probably few would find fault with ratings which place the various methods in the following order:

1. A complete and thorough X-ray examination, including preliminary study by fluoroscope, followed by stereoscopic pairs made at angles and in positions determined by the fluoroscopic study.
2. A stereo pair in P.A. position.
3. A single P.A. 14x17 radiograph on cellulose base film.
4. A single P.A. 14x17 radiograph on paper film.
5. A 4x5 photofluorograph.
6. A 35mm photofluorograph.

The first, second and third methods, just enumerated, are ruled out of the present consideration because of the very large numbers involved and the impracticability and prohibitive cost of applying these methods to such numbers.

The fourth, fifth and sixth methods have been rated in the order named, in respect to diagnostic accuracy, by several investigators. The paper film has been judged by many recognized authorities as comparable with cellulose base film. The two photofluorographic methods are claimed by their sponsors, and by workers who have used them, to come within varying percentages of accuracy or inaccuracy.

The enthusiastic proponents of the 4x5 method claim an accuracy, in disclosing minimal cases of tuberculosis, of as high as 98.5 per cent (Bridge: *Am. Rev. of Tb.*, Aug., 1940). Others claim an accuracy of 97.4 per cent (Douglas, Birkelo, Harmon and Vaughan: *Am. Jour. of Pub. Health*, Dec., 1940).

There seems to be a serious lack of detailed evidence as to the accuracy of the 35mm method. Spillman gives as his opinion that it is less than 90 per cent accurate (*Jour. A. M. A.*, Oct. 19, 1940).

Dearing and Turner, of U.S.P.H.S., (*Pub. Health Reports*, Dec. 27, 1940) reported a small survey in which 35mm and 14x17 films were compared by two readers with a resultant accuracy on the 35mm of 94.3 per cent by one reader and 88.6 per cent by the other. In other words, of all the significant lesions revealed by the 14x17 films, one reader found 94.3 per cent and the other 88.6 per cent of them in the micro-films. However, if one considers the accuracy of the method with respect *only* to minimal

cases, which after all are the ones of predominant interest and importance, both readers missed two out of seven minimal cases which were disclosed on the 14x17 film, or 28.4 per cent.

Having no generally acceptable figures for the accuracy of either of the two photofluorographic methods, let us consider the more favorable figures published and assume that the accuracy of the 4x5 miniature photo is 98.5 per cent of that of the 14x17 roentgenograph, either cellulose or roll paper film, and that the 35mm microphoto is 95 per cent as efficient in respect to disclosing minimal cases of pulmonary tuberculosis when compared with full size radiographs on either paper or cellulose films. Stated another way, this means that out of a hundred minimal cases of tuberculosis which would be revealed on the 14x17 radiographs, the 4x5 miniature photos would miss at least one and one-half cases and the 35mm microphotos at least five cases.

Now let us look at such a result from the taxpayer's hard-boiled viewpoint. In large case-finding surveys in New York City, by the use of the roll paper film method, approximately 75 per cent of the cases discovered have been in the minimal stage. Surveys elsewhere have shown at least 50 per cent of all cases discovered to be classified in the minimal stage. To be conservative, let us assume the lower figure.

In New York State, including New York City, the X-ray examination of recruits has been made at Induction Centers after the recruits have been passed by the physicians of the local Registration Board. Presumably, all cases of tuberculosis having clinical symptoms had already been excluded by the Local Board doctors and did not appear before the Induction Boards.

The result of X-ray examination by the Induction Boards was the rejection of approximately 1 per cent of all selectees examined, or about one in a hundred, for tuberculosis on the basis of the X-ray. No classifications into stages are available but let us assume, as stated above, that at least 50 per cent of the cases were in the minimal stage. This means that out of every ten thousand selectees examined by the Induction Boards about one hundred were re-

jected for pulmonary tuberculosis on the basis of X-ray findings and that at least fifty of these cases were minimal.

If these examinations had been made with 4x5 miniature photos instead of with 14x17 roentgenograms, as they were, 1½ per cent or more of them would have been missed; had they been made with 35 mm microphotos, 5 per cent or more would have been missed. Past experience teaches that each such case which gets into the Service may ultimately entail an average expense of \$10,000 in money.

How much money is it "good business" for the Government to spend for X-ray examinations *now* in order to keep one such case out of the Service? Is it worth spending a dollar to save a dollar? Spending the dollar for X-ray now will not only save many dollars in future compensation, pensions, medical care, sanatoria operation, support of dependents, etc., but it may also save the life of the rejected man and at the same time prevent his disseminating his disease among his comrades in the Service.

What would be the difference in cost between the most expensive and the least expensive mass X-ray method for X-raying 10,000 men? With paper film costing twenty-five cents per X-ray and the 35mm film costing one cent, there is a difference of twenty-four cents per X-ray, or \$2,400 on 10,000 X-rays.

If the use of the more expensive film resulted in the finding and rejecting from the Service of only one case out of these 10,000 men, it would save the Government \$7,600. The finding of two cases would save \$17,600. What is the economical course to pursue under these conditions?

If it is probable that out of 10,000 X-ray examinations only *one* more case may be discovered by the use of a more efficient method, where that case would, or even *might* be missed by another less efficient method, what is it worth to the Government to use the better method? And what is the plain moral obligation of the Government toward those who are admitted to the Service in spite of an existing tuberculosis condition which the less efficient method failed to reveal?

Home for Consumptives, Chestnut Hill.

THE FUNGICIDAL EFFECT OF SULFUR COMPOUNDS TESTED BY A NEW METHOD*

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Various sulfur preparations are in use as fungicides for the treatment of fungous diseases in plants as well as in man. According to McCallan and Wilcoxon¹ hydrogen sulfide must be considered as the actual fungicidal agent. These authors, however, found that the difference in toxicities of many commercial sulfur fungicides was neither correlated with the sulfur content, nor with the rate of formation of H_2S in the presence of fungus spores.² From their elaborate experiments they draw the conclusion that the most important single factor determining the toxicity of sulfur dust is the number of particles furnished per unit weight of the material. That means the smaller the size of the sulfur particles, the higher the toxicity.

McCallan and Wilcoxon experimented on fungi which produce diseases in plants. It seemed worthwhile to study the effect of different sulfur compounds on fungi causing diseases in man. According to the aforementioned results, a comparison of colloidal and non-colloidal sulfur preparations was made. As a representative of fungi causing diseases in man a strain of *Trichophyton gypsum* was chosen.

The colloidal sulfur compound used for these experiments is a commercial product called Bensulfoid† (colloidal bentonite-sulfur), described by A. S. McDaniel.³ The fungicidal experiments mentioned in this publication refer to fungi pathogenic for plants. The clinical use of colloidal sulfur has been reported by various authors (see H. E. Miller⁴). For our experiments we wanted to apply a method which approaches natural conditions as closely as possible. Since many of the fungi which cause disease in man produce a mycelium, which cannot be distributed into a homogeneous suspension, the usual methods applied in testing bactericidal agents were not suitable. This refers even to the otherwise excellent methods published by the U. S. Food and Drug

Administration.⁵ The application of methods elaborated for the testing of disinfectants and antiseptics against bacteria to experiments with fungi limits considerably the value of results such as obtained by Paulina Gomez-Vega⁶ and Adelia McCrea.^{7,8,9} We fully agree with Burlingame and Reddish¹⁰ concerning their objections to the method used by McCrea. The method adopted by her can by no means be considered as a "standard method for the evaluation of fungicides".

The most satisfactory method so far described seems to be the one by Burlingame and Reddish.¹⁰ However, since a five days old culture of the fungus to be tested, which has grown *on the surface* of a Sabouraud agar plate, is used in this method, the power to penetrate cannot be proved readily.

We, therefore, developed a new method.

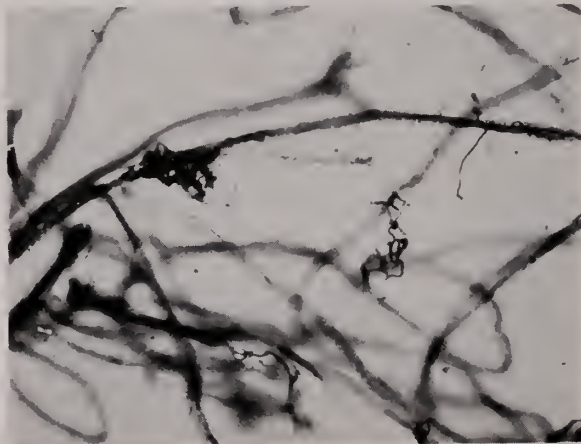


Fig. 1.—Photomicrograph showing cotton fibres with *Trichophyton gypsum* growing on and between the fibres. Since the fungus grows partly inside the string, a fungicide can be effective only, if it is able to penetrate the string substance.

An Erlenmeyer flask (500 cc. size) containing 100 cc. of a liquid medium (1 per cent peptone water proved to be satisfactory) and thirty to forty pieces of ordinary cotton or wool string ($1\frac{1}{2}$ -2 cm long, ca. $\frac{3}{4}$ mm thick) is autoclaved (20 min. $121^\circ C$). After the medium has cooled, it is inoculated with *Trichophyton gypsum* and kept at room temperature. The fungus grows in the peptone

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†The Bensulfoid use in these experiments was obtained through the courtesy of Wm. P. Poythress & Co., Inc., Richmond, Va.

water, and at the same time infects the strings (Fig. 1 and 2). The infected strings can be used at different times after the inoculation in order to get the fungus in a more or less mature state. The fungicidal test is done as follows: Some infected strings are transferred to the fungicide solution, other strings to the menstruum only, in which no



Fig. 2.—Two typical wool fibres showing the growth of *Trichophyton gypsum* on and between them.

fungicide is dissolved, as a control. After a suitable lapse of time one string is removed from each the germicide and the control, rinsed with sterile water, and placed on the surface of a suitable medium (we used corn meal agar). The results are read after two, four, seven and fourteen days sojourn at



Fig. 3.—*Trichophyton gypsum* grown in 1 per cent peptone water together with wool (1), linen (2) and artificial silk (3). Tissues transferred on corn meal agar on March 24, 1941. Photo March 28, 1941.

room temperature. Besides cotton or wool strings other "fungus carriers" may be used, if desired; e.g., small pieces of filter paper (Fig 3).

In order to check the viability of the fungus in

the strings, we dried several infected strings at room temperature, and transferred them later to corn meal agar. Growth of *Trichophyton gypsum* could be obtained up to seventy-eight days after the strings had been dried.

We found, however, certain differences of viability and of the reproductive power of the fungi in dried strings. If the time during which the infection of the strings should take place is too short the results are irregular; only some of the strings become infected, others not. If, on the other hand, the fungus culture is kept too long, the fungus dies. Besides we found that the longer the time allowed to elapse after drying, the longer the delay before the fungus starts growing after the dry string has been transferred to the nutrient medium. The most satisfactory results were obtained with strings which had been in contact with the growing fungus from two to five weeks. The viability of our infected strings apparently makes it possible to ship infected strings to different places. This would involve two advantages: (1) The shipment of fungus strains on dried strings would be much easier than the usual method of sending medium-containing test tubes, and (2) similar experiments could be carried out at different places with exactly the same fungus material.

EXPERIMENT MARCH 10, 1941. Cotton strings in 1 per cent peptone water infected with *Trichophyton gypsum*. As fungicides were used:

- (1) Bensulfoid (sulfur content $33\frac{1}{3}$ per cent by weight, bentonite $66\frac{2}{3}$ per cent) 20 gr. in 1 fl. oz. of water.
- (2) Precipitated sulfur (1 part) mixed with 2 parts of bentonite, 20 gr. of the mixture in 1 fl. oz. of water.
- (3) Refined sulfur ("300 mesh") 1 part mixed with 2 parts of bentonite. 20 gr. of the mixture in 1 fl. oz. of water.

Controls:

- (4) Bentonite 13 gr. in 1 fl. oz. of water.
- (5) Water.

In Table 1 we report the results at the final reading after fourteen days of incubation at room temperature. Bensulfoid killed the fungus after five hours of contact; precipitated sulfur after twenty-four hours, but refined sulfur was without effect even after forty-eight hours of contact. The controls need no explanation. The growth of contami-

nating organisms does not inhibit the growth of *Trichophyton gypseum* as can be seen from the first column in this table.

TABLE 1.

FUNGICIDE	TREATED WITH FUNGICIDE FOR		
	5 HOURS	24 HOURS	48 HOURS
Bensulfoid	C	—	—
Precip. sulfur	+C	—	—
Refined sulfur	+C	+	+
Bentonite (control)	+	+	+
Water (control)	+	+	+

+ = growth of *Trichophyton gypseum*.

— = sterile after 14 days of incubation.

C = contaminated.

EXPERIMENT MARCH 24, 1941. Cotton strings in 1 per cent peptone water infected with *Trichophyton gypseum*.

Fungicides:

- (1) Bensulfoid 20 gr. in 1 fl. oz. water.
- (2) Refined flour sulfur ("300 mesh") 23 gr. mixed with bentonite 13 gr. in 1 fl. oz. water.
- (3) Precipitated sulfur 45 gr. mixed with bentonite 13 gr. in 1 fl. oz. water.

Four infected strings were placed in each of the three suspensions. After six hours the strings were removed, rinsed with sterile water and placed on the surface of corn meal agar plates.

Result: Bensulfoid killed the fungus in three strings out of four; the other two sulfur preparations did not kill in any instance, though their sulfur contents were considerably higher.

Several repetitions of these experiments yielded essentially the same results: Bensulfoid seems to be more effective in killing *Trichophyton gypseum* in these experiments than other (non-colloidal) sulfur compounds. However, we cannot rely on obtaining a 100 per cent fungicidal effect. Further experiments with other kinds of fungi as well as attempts to improve the action of Bensulfoid are in progress,

and we hope to have the opportunity to report the results in due time.

SUMMARY

1. A new method for testing fungicides is described. This method offers other advantages also, which are discussed.
2. Bensulfoid, a colloidal sulfur compound, is a more effective fungicide than other (non-colloidal) sulfur preparations when tested against *Trichophyton gypseum*; however, its fungicidal action is not absolutely certain.

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THE USE OF DEPROTEINATED PANCREAS EXTRACTS

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In this day, it is an easy temptation to exaggerate the importance, usefulness, and value of the endocrines, hormones, and vitamins. Recent experience,

however, proves to my mind the value of the tissue extract, deproteinated pancreatic extract*—a rather recent addition to the constant and rapid advent of new remedies, as being a remedy of outstanding im-

*Depropanex (Sharp and Dohme).

portance and value. I do not hesitate to say that it should be classed among the group of "the sheet anchor remedies", for example, opium.

Deproteinized pancreatic extract has a specific, powerful action on the non-voluntary or non-striated muscle fibers; for example, the ureter, the gall ducts, and blood vessel wall are profoundly, favorably, and benignly affected by this potent remedy.

The following cases are cited to illustrate the helpfulness of the remedy:

CASE I.—S., white, female, married. C. C. Painful, numb, cold right index finger, with parental history of Raynaud's disease. Deproteinized pancreatic extract relieved the condition within a few minutes, and continuance of the treatment for ten days brought about apparent permanent recovery.

CASE II.—P., white, female, single, forty-eight. C. C. Jaundice with pain, prostration; thought by consultant to be malignant; inconclusive X-ray diagnosis; general condition precluded ill-advised experiment or operative surgical measures. Hence, deproteinized pancreatic extract given daily resulted in expulsion of five large gall stones, with complete relief and return of health. It should be emphasized that a previous chronic constipation due probably to a spastic small colon demonstrated at a previous abdominal operation, has also favorably responded to the treatment. Further X-ray study of the gallbladder is contemplated.

CASE III.—M., white, male, widowed, seventy-four. C. C. Recurrent attacks of anginal pains due to coronary disease, not relieved by morphine, pantopon, or dilaudid, as formerly in other repeated attacks. The use of deproteinized pancreas extract brought startling relief of the pain and cessation of the almost hourly recurrence of pain.

The dosage is about 3-5 c.c. to be given always hypodermically. The repetition may be made safely if indicated at short intervals, however, my experience shows that the interval usually may be extended to at least twelve hours or even longer.

I regard this remedy as of outstanding value. When one will consider the fact that non-striated muscle fibers may be relaxed by a potent product, two thoughts come to the mind. First, in vascular diseases, the ability of the muscle of the vessel to respond to the action of deproteinized pancreas extract indicates that the vessel is not so sclerosed or hardened, or yet so thrombosed as to preclude the possibility of relaxing the vessel, and this specific effect

is therefore of valuable diagnostic and prognostic value. It is at once admitted that the blood vessel condition may be so extensive and so grossly pathologic, that neither deproteinized pancreas extract nor any other remedy or means will effect relaxation of the vessel. Therefore, failure of relief of pain and other manifestations, by this remedy, obviously argue for the presence of gross changes and irremedial vascular diseases. Such conditions frequently face the astute clinician.

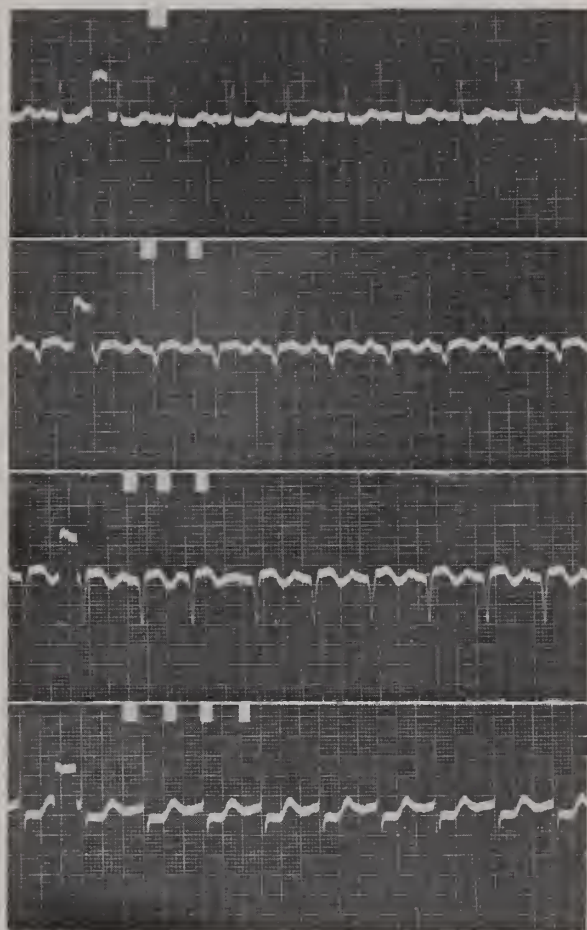


Fig. 1.—Electrocardiographic record in case of Mr. M. taken before the use of deproteinized pancreatic extract.

The pain attending coronary disease is due to a localized ischemia, therefore, a local anoxemia occurs which results in a lowered or loss of nutrition of the affected part. It seems more logical in the treatment of this condition to use a remedy which relaxes the blood vessels of the affected area, thereby relieving the pain, than to use a drug, which, by its specific action (as for example morphine), relieves the pain, but does not distinctly or beneficially af-

fect the local or collateral circulation. The effect of morphine and other similar drugs gives temporary relief to the pain, but these in no way actually appear to be curative.

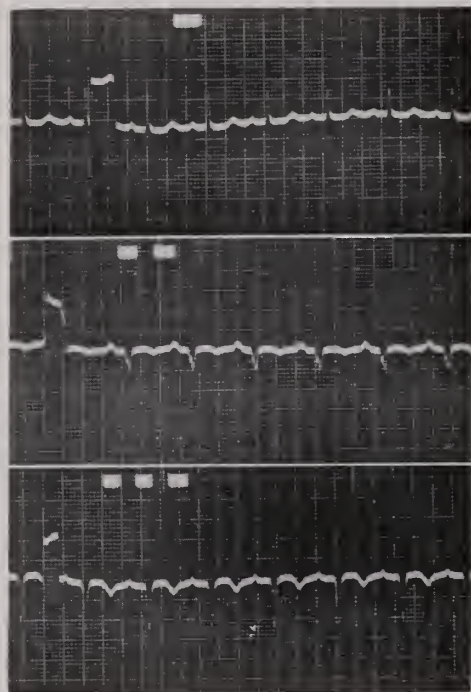


Fig. 2.—Electrocardiographic record in case of Mr. M. taken after use of deproteinized pancreatic extract.

We must not conclude that the relaxing effect of deproteinized pancreas extract is confined to the diseased vessel alone, for its effect extends to even healthy vessel walls. This effect is most benign in vascular diseases, inasmuch as this specific action will of necessity improve any collateral circulation, and thereby act to enhance the nutrition of the involved muscular structures, which in turn should add to longevity. It is wise, therefore, to continue the

treatment of coronary disease by the use of deproteinized pancreas extract for a number of weeks. No ill effects from the use of deproteinized pancreas extract in large doses may be feared by extended administration. It is in no sense habit producing.

The following is a technical outline of Depropanex Deproteinized Pancreatic Extract, as described by Dr. John Henderson:

"Deproteinized pancreatic extract is a saline solution of a chemically purified protein-free nitrogenous fraction, derived from an acid-alcohol extraction of beef pancreas. Physiological tests show it to be free from insulin, histamine and acetylcholine. It contains approximately 2.5 per cent of solids, including 0.5 per cent of non-protein nitrogen, 0.9 per cent of sodium chloride and 0.25 per cent of phenol, as preservative. It is adjusted to pH 6.5.

"It is assayed by comparing its effect upon the arterial blood pressure of anesthetized dogs with that of a standard preparation. The standard preparation was adopted after it was shown that 1 cc. produced, in a large series of dogs, an average lowering in arterial blood pressure equivalent to the rise in arterial blood pressure produced by 0.01 mg. of epinephrine, in the same dogs. The standard is preserved by the lyophile process and stored in the dried state at 5°C.

"Each lot of deproteinized pancreatic extract is tested for significant quantities of acetylcholine by comparing its effect upon the arterial blood pressure in dogs, both before and after atropinization. It is also tested for significant quantities of histamine by observing its effect in the lowering of the arterial blood pressure of urethanized rabbits. The physiological effect of each lot is also quantitatively observed by means of the heart-blocking effect in mice."

ACUTE INTUSSUSCEPTION*

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Intussusception may be defined as the infolding of a segment of the bowel into an adjacent portion. It constitutes one of the commonest and most dangerous

forms of obstruction, and one in which successful treatment depends upon early diagnosis¹. The vast majority of cases occurs in children.

This condition is not rare and much has been written on the subject, but practically all of the large series of cases have been reported in foreign

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literature. In the United States relatively few cases have been reported.

During the past ten years, there were twenty-one children admitted to the Hospital Division of the Medical College of Virginia in whom a diagnosis of intussusception was made. Of particular interest are three cases with history suggesting a previous attack. These will be discussed more fully later in this paper.

There are several generally accepted facts in regard to the incidence of intussusception. One of these is that the male sex is involved at least twice as often as is the female². Another is that the largest number of cases is seen in children under two years of age, and that at least one-half of these are infants between five and nine months of age³.

Our study is too small to be of much value in reference to these observations. Suffice it to say that, of the twenty-one cases in our series, fourteen children were under one year of age, and eleven of these were between the ages of four and nine months. The number of females involved was approximately the same as the number of males.

The causative factor in intussusception is unknown in most instances. A few cases are caused by a definite tumor at the site of infolding and a rare one by the inversion into the bowel of a Meckel's diverticulum or appendix⁴. The most likely theory for the causation of the large majority of cases is that advanced by Perrin and Lindsay.⁵ In brief, these authors feel that the anatomical features of the bowel of small children, particularly in the region of the ileocecal valve, are such that any slight gastro-intestinal upset may precipitate an intussusception.

The probable cause was demonstrable in only two of our cases. In one of these there was a tumor at the site of infolding (colic), and in another there was a Meckel's diverticulum which was presumed to be the causative factor.

The four types of intussusception may be classified according to the point of origin of the lesion⁴. The most frequent of these is the ileocecal, in which the ileocecal valve constitutes the apex of the intussusception. This type comprises about 50 per cent of the cases. In the ileocolic group, the infolding begins at some point in the ileum, and this type is found in about 30 per cent. The enteric type, as its name implies, involves only the small intestine, and the colic, likewise, involves only the large bowel.

Each of these latter groups comprises about 10 per cent of the cases.

Of the eighteen cases in this series in which the pathology was demonstrable, eight were ileocolic and there were also eight of the ileocecal group. Colic intussusception was present in the other two instances (See Table I).

TABLE I

TYPE	CASES	AT SURGERY	AT AUTOPSY
Ileocolic	8	7	1
Ileocecal	8	8	0
Colic	2	2	0

The typical clinical picture is characteristic and has been described by many writers on this subject. The onset is usually sudden and acute. The baby, apparently in perfect health, suddenly begins to cry violently with an attack of abdominal pain. He draws up his knees. His facial expression is one of anxiety. One observer⁶ has recently noted that some of these children, who had previously been difficult to treat, seemed eager and anxious to be examined. Between attacks of pain the child is usually quite comfortable, but the pain returns at intervals and causes the same reaction. The body temperature at this time is normal or subnormal. Shortly afterward, vomiting, almost projectile in nature, begins. The bowels may move normally for some time, but after a while the stools contain blood and later consist of only blood and mucus. As time passes, the expression of anxiety is replaced by one of apathy and the child cries only with an attack of pain. He seems completely disinterested in his surroundings. If the condition is not relieved, dehydration and toxemia follow.

It will be seen that the three main symptoms in this condition are vomiting, passage of blood in the stools, and abdominal pain. In our group of cases, vomiting was the most frequent symptom, occurring in all but one instance. In seventeen patients there was passage of blood per rectum. Abdominal pain was the only other symptom noted in more than half the cases (See Table II). The frequency of diarrhea and constipation was not easy to evaluate, since these conditions existed alternately in many cases.

TABLE II

SYMPTOM	CASES
Vomiting	20
Blood per rectum	17
Abdominal pain	12
Diarrhea	6
Constipation	3

The child is usually fairly well hydrated and nourished, if seen soon after the onset. Abdominal examination during this period often reveals a firm, sausage-shaped mass, which is freely movable. With attacks of pain, this mass becomes harder. Later, abdominal distention or rigidity may prevent palpation of the tumor. In this particular series, an abdominal mass was palpable in slightly less than one-half the cases. Rectal examination is extremely important. Occasionally, a mass can be seen protruding from the anal orifice, but more often the mass can be felt by the examining finger one inch or more above. In many cases, no mass is palpable, but withdrawal of the examining finger will bring forth blood or blood-stained mucus. In this series, a mass was felt on rectal examination in approximately one-half the patients, and in four of these there was also blood. In four other cases, no mass was felt, but either blood or blood stained mucus was seen at the anal orifice following withdrawal of the examining finger (See Table III).

TABLE III

SIGNS	CASES
Abdominal mass -----	10
Abdominal distention -----	10
Mass on rectal examination -----	10
Blood, mucus per rectum -----	8
Abdominal tenderness -----	5

As noted elsewhere in this paper, there seemed to be more than the usual tendency toward recurrence in our series, since three of the twenty-one cases gave a history suggestive of a previous attack. In 1934, Ladd and Gross⁷ assembled from the literature ninety-three cases of proven recurrence. Since that time, other cases⁸ have been reported.

Two of our three cases, however, recovered from this supposed initial attack without benefit of surgery, only to come to operation at a later date. These were "probable recurrences" which must remain unproven. The other case presents no such question.

CASE REPORT

H. S., a two-year-old white female, was admitted to the hospital with a history of illness of fifty-four hours duration. Onset was typical, with cramping abdominal pain, intermittent in character. Repeated spells of vomiting followed. The child was given medication consisting of first Ex-lax, then castor oil, and later rhubarb. There was at least one stool during each day of the illness. The mother stated that the child had had an abdominal operation at another hospital eleven months prior to this admission.

Physical examination on admission revealed a crying,

restless child, obviously in pain. She was moderately dehydrated. Abdominal examination at this time revealed nothing definite, and there were no other pathologic findings. Twenty-four hours later, however, there was some generalized abdominal tenderness, and a mass was thought to be palpable in the right upper quadrant. At operation, intussusception at the ileocecal valve was found. Reduction was easy and the child made an uneventful recovery.

A checkup on the record at the hospital at which the first operation was performed revealed that an intussusception had been successfully reduced.

This case of recurrence is of particular interest, because, in spite of the fact that the child had previously had an intussusception with a typical clinical picture, with proven diagnosis at operation, a second attack was allowed to continue for fifty-four hours before hospitalization was ordered. It is true that even then the picture was not sufficiently clear-cut to warrant surgical interference and it was not until twenty-four hours after admission that operation was performed. However, the case does seem to have warranted earlier hospitalization for more careful observation.

Earlier diagnosis and prompt surgery is the key to a more successful treatment of this condition. In this series, seven out of ten patients admitted with a history of illness of less than forty-eight hours' duration recovered. Of those eight children admitted with a history of illness longer than three days only three lived. In larger groups of cases the difference is even more striking.

In our series, administration of laxatives and cathartics seemed to have little effect on the outcome. At least one of these was given in seven of the cases, and of these, four patients recovered and three died. It is interesting to note, moreover, that all of these three deaths occurred in patients given only mild laxatives (See Table IV).

TABLE IV
ADMINISTRATION OF CATHARTICS AND LAXATIVES

	CASES	RECOVERED	DIED
Castor Oil -----	2	2	0
Castor Oil and Ex-lax ----	1	1	0
Calomel -----	1	1	0
Cascara -----	1	0	1
Milk of Magnesia -----	2	0	2

The nine deaths in twenty-one cases constitute about the usual mortality. Montgomery⁴ writes that the mortality in this condition is usually about 50 per cent, but adds that better results have been reported from some children's hospitals where the

physicians are constantly on the alert for this condition, and thereby tend to make earlier diagnosis and operation.

Conservative treatment seems to be in favor in England, Australia, and Denmark, and it is from these countries that most of the cases of cure by conservative means have been reported. Hipsley⁹, for example, has recorded eighteen cases successfully reduced by means of hydrostatic pressure, in which the diagnosis was later verified by operation.

It is, however, almost impossible to determine whether or not reduction by conservative methods has been completely successful, and in this country it is felt that prompt surgical intervention is the only safe method of therapy. The surgical treatment consists of gentle milking out of the intussusciptiens (infolded part of the gut). When the intussusception cannot be successfully unfolded, the usual result is a fatality.

SUMMARY

Intussusception is a common and dangerous cause of acute intestinal obstruction in children. The usual clinical picture consists of vomiting, abdominal pain, and passage of blood by bowel. Physical

examination, which may reveal an abdominal mass, should always include a careful rectal examination. Effective treatment of intussusception is dependent upon early recognition and prompt surgery. Recurrence of this condition is not unusual. Twenty-one cases of intussusception are reported.

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THE PLACE OF IODINE IN THE TREATMENT OF GOITER

An Analysis of 750 Cases*

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It is difficult today to understand the reasoning which twenty years ago proved that iodine was positively dangerous in hyperthyroidism, and was to be avoided at all costs. Tincture of iodine was used to prepare the operative field for all general surgery except that of the thyroid. In thyroid cases the neck was painted with picric acid, alcohol or some other antiseptic, so that no iodine could possibly come near the patient. Then there was the revolutionary work of Plummer¹² in 1923 at the Mayo Clinic which proved that iodine was of inestimable value

in preparing cases of hyperthyroidism for surgery. Universal adoption of this procedure indicates its worth.

As was natural, with the advent of the use of Lugol's solution for the preparation of patients with hyperthyroidism for operation, and with the development of goiter prophylaxis by the use of iodine, the drug was widely used by physicians and by the laity in all enlargements of the thyroid, with the hope that iodine would act upon it in a favorable manner. It was necessary twenty years ago to prove that Lugol's solution alone did not cure hyperthyroidism. There was the long persistence of many physicians in carrying iodine treatment of hyperthyroidism on for weeks, months and even years in their attempt to save the patient from surgery. This was in part due to their desire to see whether iodine alone could

*The cases reported in this paper are from Dr. Howard M. Clute's office, Boston, Mass., and from the Surgical Service of the Massachusetts Memorial Hospitals. The cases were studied and reviewed while the author was a member of Dr. Clute's office and on the Staff of the Department of Surgery of Boston University Medical School and the Massachusetts Memorial Hospitals.

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cure hyperthyroidism, and also to the fact that the mortality of the surgical treatment was in many places very high. With increasing experience in the management of thyroid disease it became apparent that iodine was not a "cure all" for every type of goiter and that there were definite and distinct limitations in its use. It was shown that great benefits consistently followed the proper administration of iodine in selected cases of thyroid disease and that its administration was futile in other types of goiter.

INCIDENCE OF USE OF IODINE IN 750 CASES OF GOITER, REAL AND SUSPECTED

Clute and Pilcher² reviewed some goiter cases seen in 1931 and 1932 and they found that iodine was still being given indiscriminately to all types of thyroid disease. In 1940 we were interested to learn the present practice among doctors in regard to the iodine treatment of goiter and to consider what effect, if any, this has on the ultimate course of the disease and its surgical treatment. Therefore, the

ectomy. Thirteen per cent only required two stage procedures. Only 5 per cent of the entire group had any post-operative reaction of note.

In the exophthalmic goiter cases who had had long iodine feedings before coming to us there was a marked contrast in the operability. Only 60 per cent could be done in one stage and 40 per cent required a two stage thyroidectomy (Table 1). Furthermore, 24 per cent of this group who had iodine for a long time had notable and occasionally serious post-operative reactions.

The mortality of these two groups was the same, there being two fatal cases in the non-iodine group and two in the iodine fed cases. In the patients who had had no iodine before coming to us, one died of post-operative hemorrhage. The other fatality was from a post-operative storm. As we look back on this second case we now realize that she had not had sufficiently long pre-operative treatment in the hospital. We underestimated the severity of her hyperthyroidism.

TABLE 1—EXOPHTHALMIC GOITER PATIENTS, SHOWING RELATION OF PREVIOUS IODINE THERAPY TO OPERABILITY

TOTAL NUMBER OF CASES			NUMBER OPERATED	ONE STAGE OPERATION	TWO STAGE OPERATION	REACTIONS	DEATHS
283	134 (47%)	Prolonged use of iodine before surgery	124	75 (60.5%)	49 (39.5%)	30 (24.2%)	2
	149 (53%)	No iodine before preparation for surgery	139	121 (87%)	18 (13%)	7 (5%)	2

4 deaths in { 263 cases = 1.5% mortality.
330 operations = 1.2% mortality.

last 750 patients referred to Dr. Clute's office and to his surgical service as goiter problems were reviewed from the viewpoint of their iodine treatment before we saw them, and its relation to the management of their disease after we saw them. We have endeavored, from this study, to establish and to estimate our present opinion regarding the clinical use of iodine in goiter, and to report the present tendencies of the profession toward this problem.

In this group 283 patients (Table 1) were found to have exophthalmic goiter. These patients having exophthalmic goiter were just about evenly divided in regard to previous iodine therapy. Forty-seven per cent had had iodine for weeks, months or years before coming to surgery and 53 per cent had had none. In the exophthalmic goiter patients who had had no previous iodine treatment 87 per cent were operated upon with a one stage subtotal thyroid-

In the patients who had had iodine before coming to us the deaths are very similar to the first group. The first patient, a fibrillating thyrocardiac, died as his anesthesia was being started. The second patient was a case, the severity and long duration of which we failed to properly estimate. She died in a post-operative storm. As we look back at her, and recall her inability to speak English and our difficulties in gaining her cooperation, we realize how important these details are in managing a patient with hyperthyroidism. Although we kept her in bed and gave her all the preparatory measures for over two weeks before operation, it was not long enough.

For a long time thyroid surgeons have had the clinical impression that thyroidectomy, carried out in cases of exophthalmic goiter who were at the height of their first remission from iodine, was safest and could usually be done in one stage. Our figures

seem to confirm this. In the group of cases who had not had any iodine before they had their pre-operative preparation, it was possible to perform 27 per cent more one stage thyroidectomies than in the group who had been given iodine for a long time before coming to surgery. This is a matter of considerable importance to the patient, the economic aspect being no small factor. This increased sever-

In the toxic adenomatous goiter group there were seventy-six cases (Table 2). Of these, 63 per cent had no iodine previous to their hospital admission, and 92 per cent were operated upon in one stage. Thirty-seven per cent had had previous iodine treatment, and only 62 per cent of these were done in one stage. There were four deaths in the group who had had no iodine and no deaths in the cases who

TABLE 2—TOXIC ADENOMATOUS GOITERS: RELATION OF LONG IODINE TREATMENT TO OPERABILITY

TOTAL NUMBER CASES			NUMBER OPERATED	ONE STAGE OPERATION	TWO STAGE OPERATION	POST-OP. REACTIONS	DEATHS
76	28 (37%)	Prolonged use of iodine before surgery	24	15 (62.5%)	9 (37.5%)	4 (16.6%)	0
	48 (63%)	No iodine before preparation for surgery	48	44 (91.7%)	4 (8.3%)	4 (8.3%)	4

+ deaths in { 72 cases = 5.5% mortality.
85 operations = 4.7% mortality.

ity of the disease in patients who have had iodine for some time before being prepared for surgery may be due, as Means¹⁰ has suggested, simply to the fact that their disease and its toxicity have been present longer. We believe, however, though we cannot prove it, that there is more to it than this. It is a definite and distinct clinical impression that the improvement almost all exophthalmic goiter cases have the first time they take Lugol's solution is greater than any of the remissions seen after interrupted and intermittent administrations of Lugol's solution. And we believe that surgery in this first remission is safer for the patient, allows him to have a smoother post-operative course, and is easier for the surgeon.

had had iodine. The fatalities were as follows: (1) from a post-operative storm in a patient not treated long enough (seven days) before operation; (2) a thyrocardiac, who had twenty-one days of pre-operative preparation, from a cerebral accident; (3) a thyrocardiac with twenty-five days of pre-operative preparation died of heart failure three days post-operatively; (4) a thyrocardiac, prepared for twenty-one days, died on the operating table. It is difficult for us to relate any of these deaths, except the first one, to the use or abuse of Lugol's solution. It is to be remembered that toxic adenomatous goiter cases are most often seen in middle-age or elderly patients and that many of them have cardiac complications due to their toxicity. This is in contrast to the aver-

TABLE 3—THE NUMBER OF PATIENTS WITH OTHER TYPES OF GOITER AND THE NUMBER WHO HAD PROLONGED TREATMENT WITH IODINE

	NUMBER OF CASES	HAD PREVIOUS IODINE THERAPY	NUMBER HAVING OPERATION
Non-toxic adenomatous goiter	97	26 (26.8%)	76
Non-toxic discrete adenoma	68	10 (14.7%)	63
Simple colloid goiter	44	10 (22.7%)	0
Chronic thyroiditis	9	3 (33.3%)	7
Cancer of thyroid	6	1 (16.6%)	4
Neurocirculatory asthenia (no thyroid disease)	167	39 (23.3%)	0

age exophthalmic goiter case. The toxic adenomatous goiter cases as a whole have a more serious disease because of the above factors, and their operative risk is always higher. Also, some of these cases have only a single, discrete adenoma causing the toxicity and are, therefore, candidates only for a one stage operation. For these reasons, toxic adenomatous goiter patients do not lend themselves to comparison with an equal number of exophthalmic goiter patients. It is, however, obvious to us that a long course of iodine therapy for a no longer young toxic adenomatous goiter patient can only allow them to become older, prolong their disease and its common cardiac disturbances and cause their risk to be greater when they finally come to surgical treatment.

Interesting patients with suspected thyroid disease who come to the office of a physician who treats many cases of thyroid disturbances. At times these patients, who are suffering from no disease of the thyroid gland, present diagnostic problems and we are convinced that any thyroid surgery in these neuroasthenia cases is definitely contraindicated.

It is apparent from our figures that any patient with real or suspected thyroid disease still stands a strong possibility of receiving a "course" of iodine treatment. However, this probability is not as marked as it has been in the recent past. It would seem desirable to review briefly the benefits which we may hope to derive from iodine therapy in thyroid disease and to point out the dangers which are latent in ill chosen iodine administration.

TABLE 4—SUMMARY OF ALL CASES AND MORTALITY FIGURES

	TOTAL NUMBER OF CASES	CASES HAVING OPERATION	TOTAL NUMBER OF OPERATIONS	DEATHS
Exophthalmic goiter	283	263	330	4
Toxic adenomatous goiter	76	72	85	4
Non-toxic adenomatous goiter	97	76	76	0
Simple colloid goiter	44	0	0	0
Non-toxic discrete adenoma	68	63	63	0
Chronic thyroiditis	9	7	7	0
Cancer of thyroid	6	4	4	0
Neurocirculatory asthenia. (No thyroid disease)	167	0	0	0
Total	750	485	565	8

8 deaths in { 485 cases = 1.6% mortality.
565 operations = 1.4% mortality.

Table 3 outlines the number of cases of other types of goiter which we encountered and whether or not they had had previous iodine treatment.

Twenty-seven per cent of the non-toxic adenomatous goiters had received iodine treatment before coming to us.

Fifteen per cent of the non-toxic discrete adenomas had been treated with iodine.

Twenty-three per cent of the simple colloid goiters had received iodine treatment.

Thirty-three per cent of the thyroiditis cases and 17 per cent of the cancer cases had been treated with iodine.

And finally, 23 per cent of the patients with neurocirculatory asthenia (or whatever one wishes to call it) had been treated with iodine, many for years. There is always a large number of most in-

INDICATIONS FOR IODINE IN DISEASES OF THE THYROID

Iodine is of generally recognized value in preventing the development of simple colloid (endemic) goiter. The work of Marine^{8,9} and his associates has sufficiently proved that colloid goiter is a result of absolute or relative lack of iodine—a deficiency disease. Only minute quantities of iodine are needed for the prophylaxis of endemic goiter. This iodine can most readily be given in iodized salt for kitchen and table use. McClure¹¹ and others have proven both the innocuousness and the efficacy of this method. In areas where the iodine content of the food and water is abnormally low, iodine should be given to children, particularly female children, and to pregnant and lactating women. If one is not an adherent to the use of iodized table salt, there are

tablets of iodine available for the prevention of endemic goiter. Another instance of the prophylactic use of iodine is in pregnant women known to have endemic goiter. It is well known that there is a considerable rise in the basal metabolic rate in women who become pregnant and, therefore, they are in need of an extra amount of iodine. Any woman exhibiting any fullness of the thyroid gland during pregnancy should be given small doses of iodine, and those showing any evidence of hypothyroidism should be given thyroid substance. This will not only prevent marked enlargement of the mother's goiter but will also prevent the occurrence of thyroid enlargements in the baby. Fewer cretins will be born if this procedure is carried out.

The treatment of simple colloid goiter is in no way as easy as its prevention. We believe that small doses of iodine, as in iodized salt, may prevent further hypertrophy and colloid storage in an already enlarged thyroid gland, but we have no proof of this. It is certain that in some cases the enlargement of the thyroid progresses with iodine administration, but it appears equally certain that in many other cases further enlargement of the thyroid is checked. Benefit from iodine administration decreases with the age of the patient and with the age of the goiter. Therefore, we favor the administration of small doses of iodine (iodized table salt) to patients with early simple colloid goiter, particularly in adolescent girls. A simple colloid goiter usually is found only in persons under twenty-one years of age, and beyond that age the goiter usually contains adenomata and is then known as a colloid adenomatous goiter. Large doses of iodine should not be given to colloid adenomatous goiters, the danger of which will be discussed later.

The most striking use of iodine is its use in exophthalmic goiter patients in order to bring about a remission of the disease preparatory to surgical treatment, first well established by Plummer¹² in 1923. In this capacity iodine has been of inestimable value. This also applies to the crisis of exophthalmic goiter, either a spontaneous one in patients under no treatment or in the ones occurring post-operatively. The post-operative crises are rare now if the patient has been prepared properly with iodine and all the other supportive measures for ten to twenty days before operation. Long use of iodine in exophthalmic goiter patients before they come to surgery is believed by

many to increase their chance of having a post-operative crisis when they finally have surgical treatment. Our figures (Table 1) seem to confirm this clinical impression. We believe the remission that accompanies the first iodine feeding is the best one, and is the optimum place for surgery.

Iodine has proved of great value in the management of certain rare patients who, following thyroidectomy for exophthalmic goiter, have mild residual toxic symptoms. Some of these patients are completely controlled by taking iodine daily, and a few appear to need iodine in relatively large amounts constantly. We cannot explain this, but we are sure it is true. However, it must be stated that the administration of iodine post-operatively does not prevent recurrence of hyperthyroidism in certain cases.

It is our experience that iodine is beneficial in temporarily improving the hyperthyroidism of toxic adenomatous goiters just as it is in exophthalmic goiter. The iodine reduces the metabolism, controls the activation, slows the pulse rate and generally improves these patients. We use it routinely in the preparation of these patients for operation.

The last place in which iodine is useful in the management of thyroid disease is in certain cases of borderline hyperthyroidism. It is well recognized that patients with neurocirculatory asthenia (neurasthenia) present a clinical picture not unlike patients with mild hyperthyroidism. In these borderline cases iodine may be tried for a few days as a diagnostic measure. In these cases a frank and definite improvement in symptoms and metabolic readings clinches the diagnosis of hyperthyroidism. Cases that really need this test procedure are, we believe, rare.

After a considerable experience in the treatment of patients with disease of the thyroid gland, we have concluded that only two general indications are present in disorders of this gland for the administration of iodine: first, as a means of prophylaxis against the development of colloid (endemic) goiter and against further enlargement of endemic goiter in adolescent children and in pregnant and lactating women; secondly, in the management of hyperthyroidism, whether it be due to exophthalmic or toxic adenomatous goiter, preparatory to surgical treatment.

INSTANCES WHERE THE USE OF IODINE MAY NOT BE ADVISABLE

What harm may come from the administration of iodine to patients with goiter except as enumerated above? Means¹⁰ warns against the use of large doses of iodine for simple colloid goiter. There has been much discussion in the literature of the recent past about the possibility of iodine administration causing a non-toxic goiter to become toxic. McClure¹¹ has reviewed the effects of the use of iodized table salt in Michigan. This State is in the endemic goiter belt where colloid goiters were quite prevalent. After thirteen years of general usage of iodized table salt, there was a notable increase in the number of operations for adenomatous goiters and he believes that the iodized table salt may have activated a group of patients with quiescent adenomas, producing toxic goiter symptoms. It is highly significant that during these thirteen years there was no increase in the number of operations for primary hyperthyroidism (exophthalmic goiter), yet there was an increase in the number of operations for hyperthyroidism due to adenomatous goiters. Means¹⁰ states, "Plummer has gone on record as believing that iodine will activate simple adenomatous goiter, and we have seen a few cases ourselves that strongly suggest this." And again he says in regard to adenomatous goiter, "The use of iodine to reduce the size of the goiter is not only often dangerous through the production of toxicity, but ineffective, as it has been in our hands." Marine⁸ and others^{4,5,7} also believe that iodine administration may precipitate hyperthyroidism in patients with non-toxic adenomatous goiters.

The administration of a drug should not be undertaken unless one has some definite objective in mind. It is the experience of physicians who treat large numbers of patients with diseases of the thyroid that iodine will not reduce the size of an adenomatous goiter to any extent. No doubt most physicians have had the same experience. It is now recognized¹⁰ that carcinoma of the thyroid originates in pre-existing adenomata in 90 per cent of the cases. This is more particularly true of the discrete adenoma of the thyroid, which is usually the "fetal" type of adenoma. Therefore, if nodular (adenomatous) goiters are pre-malignant lesions in a definite percentage of cases, the time spent in the administration of iodine, which cannot reduce the size of the goiter appreciably, may

well be ill-advised in the view of the possibility that malignancy may already be present. The chance of early operation, so necessary for the eradication of malignancy, is lost while iodine is administered. One of our cancer cases had had iodine before he was given the benefit of surgical treatment. If it is recognized that iodine will not make an adenoma of the thyroid disappear, then it is unfair to the patient to spend his time and money with this treatment.

It must be strongly emphasized that iodine does not cure hyperthyroidism. The studies of Marine⁸ and many others have shown that iodine continued weeks, months or years does not cure hyperthyroidism. It has been repeatedly demonstrated by carefully controlled studies of the metabolism and by mortality statistics that surgery is a safe, quick, and sure method for the cure of hyperthyroidism. The longer the hyperthyroidism persists, whether it be partially controlled by iodine or not, the more serious the disease, the more dangerous the surgery and the more likelihood of one having to undergo a two stage operation for the cure of his disease. Marine⁸ believes, like Plummer, that iodine should be administered to exophthalmic goiter patients only if they are to be operated on within about two weeks. DeCourcy³ states, "The use of iodine for treatment (of exophthalmic goiter patients) without thyroidec-tomy in view has the unfortunate effect of making the patient 'iodine fast', so that when operation finally becomes necessary pre-operative iodination fails to produce the temporary benefit required to reduce surgical risk." E. Goetsch⁵ stresses the necessity of multiple stage operations in many patients previously treated with iodine. A. Goetsch⁴ believes that prolonged use of iodine in cases of hyperthyroidism strongly predisposes to post-operative crises and to increased mortality. In their fatal cases dying in post-operative crises, practically all of them had had indiscriminate treatment with iodine before they came to surgery. Wetherell and Groat¹³ call attention to the economic loss to a patient with hyperthyroidism when he has prolonged treatment with iodine, and this loss is increased further because of the fact that he runs the very definite possibility of having to undergo multiple stage operations before he can return to his work. This factor is of great importance to the average patient.

SUMMARY AND CONCLUSIONS

1. Seven hundred and fifty cases of real and suspected thyroid disease are analyzed from the standpoint of iodine therapy.
2. The prolonged and indiscriminate use of iodine in hyperthyroidism is found to increase the number of two stage thyroidectomies as well as the number of post-operative reactions.
3. The indications for the use of iodine in the various kinds of thyroid disease are discussed.
4. The harmful effects which may arise from iodine administration in certain types of thyroid disease are pointed out.

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MULTIPLE MYELOMA

Report of a Case*

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A white male, aged sixty-five years, was admitted to Stuart Circle Hospital on March 14, 1941, with the chief complaints of weakness, stomach trouble and nasal hemorrhages of three months' duration. He had had the usual childhood diseases and an attack of typhoid fever at twelve years.

The patient was employed as a city fireman, and in 1903 broke his vertebral column at the level of the first lumbar vertebra and injured his spinal cord, which resulted in a partial paralysis of his body from the waist down. Although he remained a semi-invalid, he returned to his job, being employed in some capacity or another until 1939. In 1935, he broke his right ankle, but he managed to continue working with an ankle brace of his own making.

*Read before the Clinical Club of Stuart Circle Hospital, Richmond, April 9, 1941.

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Since the recovery from his accident in 1903 he had no urinary symptoms until April, 1939, when he began to complain of frequency, dribbling, dysuria and a nocturia of 10-15 times. A cystometric reading was done revealing an atonic bladder. However, a definite bladder neck obstruction was found by rectal and cystoscopic examinations, for which reason a transurethral resection was done in September, 1939. This was followed by some temporary relief, but his previous symptoms soon returned and have persisted up to the present time. Previous to his resection the laboratory reported 4,180,000 erythrocytes and 81 per cent hemoglobin, 9,300 leukocytes and 62 per cent neutrophils; the blood urea was 18.8 milligrams per cent; the urine contained a trace of albumin, one to four blood and ten to twenty-five pus cells per high power field. Subsequently, several more cystometric readings were done, and all

pointed to an atonic or cord bladder. In November, 1939, a neurological examination of the patient was done, and he was found to have a bilateral sciatic nerve paralysis below the knees, present since his accident in 1903. The bladder difficulties were thought to have been due to an accentuation of a pre-existing nerve imbalance resulting from his old injury by bone productive changes over a period of years, now causing some encroachment upon the spinal canal and involving the roots of the cauda equina and possibly the conus medullaris. There were no familial tendencies to any disease whatsoever.

About three months previous to admission, this patient suffered an attack of pleurisy which was successfully treated. Following this infection he began having persistent nausea but no vomiting and a very poor appetite. About this time an occasional headache throughout both temporo-parietal regions became evident, accompanied by attacks of vertigo, both of which were apparently relieved by prolonged nasal hemorrhages. He lost thirty-five pounds and became progressively weaker. On many occasions over the past few years a severe lumbar back pain had incapacitated the patient for several hours at a time, but this pain was relieved by rubbing his back with a liniment and using a heat pad locally.

The patient on admission gave the general appearance of being a poorly developed and poorly nourished, anemic white male with marked atrophy of the muscles of the lower extremities. The right ankle joint was fused in an abnormal shape; a slight hip-pus was present in the region of the first lumbar vertebra; the terminal phalanx of the left forefinger was absent; and, an old healed fracture of the left clavicle was evident. A decubital ulcer, two and a half centimeters in diameter, was present over the tip of the sacrum. The pulse rhythm was regular, and the rate was 78 per minute; the temperature was 99 F; the respiratory rate was 20 per minute; the blood pressure was 160 millimeters of mercury systolic and 94 millimeters of mercury diastolic. Both nares contained blood clots, and there was present on the tongue a black coating, which would not rub off. The radial and retinal arteries were markedly arteriosclerotic. There was a definite distention in the hypogastric region of the abdomen. Dullness to percussion was found in the right upper quadrant over the liver which was palpated at least four centimeters below the right costal border on

deep inspiration. The liver edge was smooth and non-tender. The lower extremities could be moved voluntarily without much difficulty; the muscles were markedly atrophied; the sensation to pain, temperature and position in the lower extremities was doubtful, and the deep reflexes were lost.

IMPRESSION: (1) Carcinoma of the liver; (2) Partial paralysis of the lower extremities and bladder; (3) Arteriosclerotic cardio-vascular disease; (4) Decubital ulcer.

The laboratory reported 10,800 white blood cells with 65 per cent neutrophils, 11 per cent endothelial leukocytes, 20 per cent lymphocytes, and 4 per cent eosinophils; 1,570,000 red blood cells with 33.5 per cent hemoglobin; reticulocytes, 2 per cent; and 158,000 blood platelets. The urine following catheterization measured only 180 cubic centimeters, straw colored and cloudy in appearance, acid, specific gravity of 1.010, heavy albumin, 4 plus blood and 3 to 5 pus cells were present per high power field. A roentgenogram of the genito-urinary tract did not reveal any stones, and a cystoscopic examination was not done. The serum protein on March 14, 1941, was above 10.5 grams by the Kagan method. This was repeated the next day and again found to be above 10.5 grams by the Kagan method and verified as 12.2 grams by chemical analysis. Stool examination was positive for blood. The phenolsulphonphthalein test for kidney function revealed only 10 per cent of the dye excreted after two hours in 208 cubic centimeters of urine. On March 18, 1941, the urine contained 4 plus blood and 3 plus pus cells per high power field, a heavy albumin and the presence of Bence-Jones protein in small amounts. Bence-Jones protein was again found in the urine on the following day and in all succeeding specimens while in the hospital. On March 15, 1941, 1 per cent plasma cells were found in the blood smear, 2 per cent on March 17, and 3 per cent on March 18. A diagnosis of multiple myeloma was now considered and confirmed by a roentgenogram of the skull on March 19, 1941, which showed the multiple punched out areas that are more or less typical of this disease. No definite evidence of multiple myeloma could be demonstrated in the thoracic cage or vertebral column by roentgenogram.

Treatment was purely symptomatic. Two transfusions of 500 cubic centimeters of whole citrated blood were given on March 18 and March 24, 1941, raising the hemoglobin to 54 per cent. The tem-

perature and pulse varied from day to day in an irregular fashion with occasional peaks of fever as high as 102 F and 102.5 F. During hospitalization the patient complained only of some mild bilateral temporo-parietal headaches; he had no recurrences of his epistaxis; and, his urinary symptoms cleared up remarkably well after the insertion of an indwelling catheter. Although this condition is a fatal one, the patient left the hospital on March 27, 1941, much improved and in a fair general state of health.

COMMENT

Multiple myeloma is a malignant tumor of the bone marrow arising from a single cell type, the plasma cell, for which reason it is also called "plasma cell myeloma" or "plasmocytoma". Clinically, these tumors are very easily distinguished from other malignant tumors of the bone. They occur in people past forty years of age and are characterized by a multiplicity of lesions. However, Haden and Rumsey¹ point out the misnomer of the term, "multiple myeloma", since this disease may manifest itself as single or multiple tumors, as a generalized hyperplasia of the marrow alone, or as a generalized hyperplasia with discrete tumor formation. Accordingly, they prefer the term, "myelomatosis" rather than "multiple myeloma" since it includes all various types of cases.

Symptoms do not occur early in this disease, since no pain is caused by hyperplasia of the marrow *per se*. Pain, however, once developed is the most outstanding symptom and is produced from erosion of the periosteum and pressure on the adjacent nerves. With decalcification and softening of the bony framework by the hyperplasia of the plasma cells, spontaneous fractures, especially of the ribs, occur, and the vertebrae are usually compressed causing the characteristic neuritic back pains. No tumors were demonstrated in the ribs or vertebrae, so apparently there was no encroachment on the periosteum in these bones and hence no pain.

The second most frequent symptom is weakness, which is in part due to the toxemia present in all malignant diseases, but also resulting mainly from the anemia, which is invariably present when this condition is well developed. This patient had a hemoglobin of 33.5 per cent on admission and was extremely weak. No evidence of multiple myeloma could be demonstrated by roentgenogram in any of the flat bones of the body other than the skull. How-

ever, in view of the marked anemia and weakness, a generalized plasma cell hyperplasia of the bone marrow without tumor formation could very easily have been present. A sternal puncture was not done, so this statement cannot be proven. On the other hand, there might have been some other factors producing this anemia which were not known at the time. One important factor may have been the marked kidney involvement present in this case. Late in this disease there is an accumulation of Bence-Jones protein in the tubules, capillaries, and glomeruli as shown by Bell.² Casts of the Bence-Jones protein obstruct the tubules and eventually there is marked atrophy of the cortex and renal failure. The low dye excretion (10 per cent in two hours) and the report of a blood urea of 123 milligrams per cent and a creatinine of 6.8 milligrams per cent on April 6, 1941, as compared with a urea of 18.8 milligrams per cent in September, 1939, clearly showed the possibility of marked kidney damage and uremia with death probably not far off. Whether the Bence-Jones protein has so destroyed the kidney parenchyma or whether this is the terminal phase of a chronic hemorrhagic nephritis can only definitely be proven at autopsy.

Occasionally, some plasma cells appear in the blood stream, but this is not the usual finding. On one occasion, March 18, 1941, as high as 3 per cent plasma cells were found in the blood smear. Several subsequent reports showed 1 and 2 per cent plasma cells, but the majority of the smears did not show these cells. These cells which occur so abundantly in the bone marrow are seldom found in the blood stream and so strikingly differentiate this type of bone-marrow cell hyperplasia from the myelocytic leukemias in which there is a preponderance of immature myeloid cells in the blood stream.

A serum protein above 10 grams is rare and is seldom found in any pathologic condition other than multiple myeloma or lymphogranuloma venereum. Because of the high serum protein (12.2 grams) a specimen of urine was examined and found to be positive for Bence-Jones protein. The nature of this substance is not known, nor does it appear always in each urine specimen of patients with this disease. In any case a positive Bence-Jones protein in the blood or urine indicates almost with certainty that there is some involvement of the bone-marrow. A blood smear will usually rule out the leukemias. Careful palpation of the bony structures should next

be done to find any tumors. If these are not found, then roentgenogram examination of the skull, ribs, and the vertebral column will usually reveal the typical lesions of multiple myeloma. The prognosis is poor since most of the individuals die within two years after a diagnosis of multiple myeloma is made.

BIBLIOGRAPHY

1. Haden, H. L., and Rumsey, J. M.: Multiple Myeloma, or Myelomatosis, *Medical Clinics of North America*, 24, 2, 369-380, March, 1940.
2. Bell, E. T.: Renal Lesions Associated with Multiple Myeloma, *Am. J. Path.*, 9, 393-420, July, 1933.

301 Roseneath Road.

Correspondence

An Interesting Case.

TO THE EDITOR:

I have just discharged Mr. B., age eighty years. The diagnosis was measles, developing bronchial pneumonia after a few days; was quite ill for a while, with a high temperature; he is on his porch today in the sunshine and says "I am feeling fine".

I am reporting this on account of the age of Mr. B. So far as I know, this is the oldest case of measles.

R. D. GARCIN, M. D.

Richmond, Va.

September 8, 1941.

Mental Hygiene Activities

Mental Hygiene covers such a large field that all endeavors to correct human behavior fall within its boundaries. The Conference on Industrial Medicine recently held in Richmond was concerned with Mental Hygiene activities. The meeting to discuss the values of planned parenthood, held in the Capital City on September 26th, discussed many topics that would grace the program of any Mental Hygiene Society. In truth in Virginia at present there are several organizations working in the field of human behavior that are only differentiated from the State Mental Hygiene Society because they specialize their activities in some particular field.

The Mental Hygiene Society should coordinate all these activities; it should take advantage of these efforts in its campaign. The special bias of the

workers leads to greater interest, which in turn gives more power to these groups. Therefore, all members should support these movements as if they were of their own organization.

The next item of interest for the Mental Hygiene Society is the Annual Meeting. This will be held at the Academy of Medicine in Richmond, on October 29th. At that time new officers will be elected—the president, vice-president, secretary, and treasurer. The position of five to seven members of the Board of Directors will have to be refilled.

At the last meeting of the Board several changes in the Constitution were suggested. These modifications have been considered by the Executive Committee so will come before the general meeting at that time.

The program will call for afternoon and evening speakers. The Program Committee is now arranging the details which will be announced as soon as possible. It is hoped that a program as attractive as the one presented last October can be arranged. Be sure to keep the date—October 29th—in mind. Plan to attend.

Miscellaneous

Hospital Bed Facilities in the United States.

The most widespread survey ever made of hospital bed facilities in the United States, just released by the Census Bureau of the Department of Commerce, reveals that 1,282,785 beds were available in 9,614 institutions for the medical care of the American people in 1939.

The country's 6,991 hospitals and sanatoriums provided the great bulk of this care—355,145,063 patient-days, or the equivalent of one week-end stay in a hospital each year for every person in the United States. Infirmaries and nursing, convalescent, and rest homes provided the remainder.

Hospitals and sanatoriums had 1,186,262 beds—92 per cent of the nation's total. Census Bureau figures show that the average hospital had 169 beds and served 5,000 families.

Hospital facilities for the country, however, were well below the "minimum requirements for adequate medical service" set up in 1933 by the Committee on the Costs of Medical Care. Here's how the number of hospital beds per 10,000 population compares:

	BEDS AVAILABLE	BEDS NEEDED
General	38	46
Tuberculosis	6	14
Mental	46	56
Total	90	116

To meet this minimum of 116 beds per 10,000 population, the United States would have to build 2,000 more average-size, 170-bed hospitals.

Even counting in all the beds available in infirmaries and nursing, convalescent, and rest homes, the Census figures show that twenty-six states had inadequate hospital facilities—fewer than 100 beds per 10,000 population. Eighteen states had between 100 and 124 beds—approximately adequate facilities. Massachusetts, New York, Colorado, Maryland, and the District of Columbia had good facilities—more than 124 beds per 10,000 population.

New York State alone had 192,345 medical-care beds, or more than one-seventh of the nation's total.

Even existing facilities are not being used fully, the Census Bureau Survey indicated. Allowing a margin of reserve for epidemic peaks, the Committee on the Cost of Medical Care estimated that general hospitals would operate most efficiently with an occupancy of 80 per cent, and mental and tuberculosis hospitals with an occupancy of 90 per cent.

In 1939, general hospitals were operating at 70 per cent of capacity, tuberculosis hospitals at 85 per cent, and mental hospitals at 95 per cent. The Census Bureau noted that many mental hospitals are overcrowded, due to rapidly increasing hospitalization for this type of illness.

Although only 594 hospitals—less than one in ten—were for nervous and mental patients, they had 602,850 beds, or more than one-half of the total for all types of patients. They gave 208,466,000 patient-days of care.

The 5,912 general hospitals gave 122,467,000 patient-days of care, and the 485 tuberculosis hospitals 24,212,000 patient-days.

Approximately 77 per cent of the care rendered in 1939 was in state, local and federal government-controlled hospitals, 20 per cent in non-profit institutions, and 3 per cent in proprietary institutions, the Census Bureau noted. The large proportion of care financed by taxes is due to government tuberculosis sanatoriums and government hospitals for mental patients.

MEDICAL-CARE BEDS IN THE UNITED STATES (Classification based on the "minimum requirements" set up by the Committee on the Costs of Medical Care)

	TOTAL NUMBER OF BEDS	BEDS PER 10,000 POPULATION
GOOD FACILITIES		
District of Columbia	12,858	194
Massachusetts	66,205	153
New York	192,345	143
Colorado	15,427	137
Maryland	22,836	125
ADEQUATE FACILITIES		
California	85,365	124
New Hampshire	6,028	123
Vermont	4,387	122
Rhode Island	8,659	121
Washington	20,780	120
Connecticut	20,257	119
Delaware	3,133	118
Wyoming	2,903	116
Minnesota	31,897	114
New Jersey	47,494	114
Oregon	12,238	112
Wisconsin	35,174	112
Montana	6,169	110
Nevada	1,216	110
Illinois	84,871	108
Michigan	55,844	106
Arizona	5,242	105
North Dakota	6,470	101
INADEQUATE FACILITIES		
Maine	8,282	98
Pennsylvania	93,756	95
Iowa	23,475	93
South Dakota	5,772	90
Missouri	33,850	89
Kansas	16,070	89
Nebraska	11,506	87
Ohio	59,823	87
Indiana	29,449	86
Virginia	22,929	86
New Mexico	4,363	82
Louisiana	18,357	78
Utah	3,988	73
Oklahoma	16,858	72
Idaho	3,748	71
Florida	13,372	71
Kentucky	18,795	66
Texas	38,821	61
West Virginia	11,477	60
North Carolina	20,711	58
Tennessee	16,514	57
Arkansas	10,946	56
South Carolina	10,670	56
Georgia	17,222	55
Alabama	14,547	51
Mississippi	9,686	44
U. S. Total	1,282,785	97

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for August, 1941, compared with the same month in 1940 and for the period of January through August, 1941, compared with the same period in 1940 follows:

	AUG.		JAN.-	
	1941	1940	1941	1940
Typhoid and Paratyphoid Fever	37	35	134	130
Diarrhea and Dysentery	1,512	541	3,145	1,167
Measles	262	150	33,727	3,446
Scarlet Fever	53	46	961	1,099
Diphtheria	35	53	261	360
Poliomyelitis	28	27	50	43
Meningitis	14	2	81	55
Undulant Fever	1	2	8	13
Rocky Mountain Spotted Fever	8	19	23	38
Tularemia	2	1	20	29

TUBERCULOSIS IN INDUSTRY

It has been proven by the State Health Department's experience that, as is generally conceded, morbidity rates for tuberculosis are considerably higher among industrial workers than among the general population. The workman's health is a dual responsibility of industry and organized medicine. He can be safeguarded in the plant from exposure to tuberculosis by a careful pre-employment examination that includes an x-ray of the chest, and from unsatisfactory working conditions that might tend to activate old quiescent lesions. Outside the plant, however, it is public health's responsibility to protect the individual from communicable diseases, and to provide the best possible environmental sanitation.

The use of the paper film for several years by the Department for the mass x-raying of thousands of students in schools and colleges, and sample studies in industry convinced it that industry needed assistance in the detection of active and latent tuberculosis cases among its workers.

This year the Department purchased a Westinghouse condenser discharge machine, using 35 millimeter films, with rotating anode tubes. A Leitz camera with an F 1.5 lens and a magazine holding a 250 roll film is standard equipment on this apparatus. The outfit is transported in a three-quarter-ton delivery truck from plant to plant. Workers can be x-rayed at the rate of one a minute, at extremely low cost. All films are processed in a portable dark room the same day they are exposed and forwarded to the Department for interpretation. The machine also is equipped to take conventional 14 inch by 17 inch films. It is the Department's practice to retake on large films all doubtful or borderline cases.

While the 35 millimeter film is not practical for radiologists in private practice, it is excellent for mass x-raying. Tuberculosis case finding is open to the criticism of not finding the early case. This is justified inasmuch as 80 per cent of the patients when admitted to Virginia's three state sanatoria are beyond the minimal stage of the disease. The introduction of the 35 millimeter film changes the entire program. Formerly, it was hoped that patients would come for an examination. Now, the examination is taken to the patient. This plan represents the only available method to locate the asymptomatic case before it develops into a hopeless advanced condition.

A total of 10,091 workers including the following industries: tobacco industry, explosives, life insurance companies, transportation and communication, steel fabrication and manufacturing, recreation and amusement, and coal mining have been x-rayed by means of paper and 35 millimeter films. Of these .563 per cent had active clinical tuberculosis and 2.11 per cent showed healed lesions. These rates are comparable with other sections of the country with the exception of the tobacco industry. It is believed that the high rate here is due to the large percentage of Negroes employed. All records now are being transferred to punch cards. This will permit a much better analysis and statistical study than is now possible.

Presidents and Places of Meetings of the Medical Society of Virginia

PRESIDENT	PLACE OF MEETING	YEAR OF MEETING
*Dr. James McClurg, Richmond		1821
*Dr. William Foushee, Richmond		1822
*Dr. William Foushee, Richmond		1823
*Dr. James Henderson, Richmond		1824
Meetings Discontinued.		
*Dr. Robert William Haxall, Richmond		1841
*Dr. Robert William Haxall, Richmond		1842
*Dr. Frederick Marx, Richmond		1843
*Dr. Thomas Nelson, Richmond		1844
*Dr. William A Patteson, Richmond		1845
*Dr. William A Patteson, Richmond		1846
*Dr. John A. Cunningham, Richmond		1847
*Dr. William A Patteson, Richmond		1848
		1849
*Dr. Robert William Haxall, Richmond		1850
*Dr. Beverley R. Wellford, Fredericksburg		1851
*Dr. James Beale, Richmond		1852
*Dr. Thomas P. Atkinson, Danville		1853
*Dr. Carter P. Johnson, Richmond		1854
*Dr. H. C. Worsham, Dinwiddie		1855
*Dr. H. C. Worsham, Dinwiddie		1856
*Dr. James Bolton, Richmond		1857
*Dr. Levin S. Joynes, Richmond		1858
Most of these meetings were held in Richmond.		
Last meeting held in 1859.		
*Dr. R. S. Payne, Lynchburg	Richmond	1870
*Dr. R. S. Payne, Lynchburg	Lynchburg	1871
*Dr. A. M. Fauntleroy, Staunton	Staunton	1872
*Dr. Harvey Black, Blacksburg	Norfolk	1873
*Dr. A. G. Tebault, London Bridge	Abingdon	1874
*Dr. S. C. Gleaves, Wytheville	Richmond	1875
*Dr. F. D. Cunningham, Richmond	Charlottesville	1876
*Dr. J. L. Cabell, University	Petersburg	1877
*Dr. J. H. Claiborne, Petersburg	Richmond	1878
*Dr. L. S. Joynes, Richmond	Alexandria	1879
*Dr. Henry Latham, Lynchburg	Danville	1880
*Dr. Hunter McGuire, Richmond	Old Point Comfort	1881
*Dr. G. W. Semple, Hampton	Fauquier White Sulphur Springs	1882
*Dr. W. D. Cooper, Morrisville	Rockbridge Alum Springs	1883
*Dr. J. E. Chancellor, Charlottesville	Rawley Springs	1884
*Dr. S. K. Jackson, Norfolk	Alleghany Springs	1885
*Dr. Rawley W. Martin, Chatham	Fredericksburg	1886
*Dr. Bedford Brown, Alexandria	Richmond	1887
*Dr. Benjamin Blackford, Lynchburg	Norfolk	1888
*Dr. E. W. Row, Orange C. H.	Roanoke	1889
*Dr. Oscar Wiley, Salem	Rockbridge Alum Springs	1890
*Dr. W. W. Parker, Richmond	Lynchburg	1891
*Dr. H. Grey Latham, Lynchburg	Alleghany Springs	1892
*Dr. Herbert M. Nash, Norfolk	Charlottesville	1893
*Dr. Wm. P. McGuire, Winchester	Richmond	1894
*Dr. Robt. J. Preston, Abingdon	Wytheville	1895
*Dr. Wm. L. Robinson, Danville	Rockbridge Alum Springs	1896
*Dr. Geo. Ben Johnston, Richmond	Hot Springs	1897
*Dr. Lewis E. Harvie, Danville	Virginia Beach	1898
*Dr. Jacob Michaux, Richmond	Richmond	1899
*Dr. Hugh T. Nelson, Charlottesville	Charlottesville	1900
*Dr. J. R. Gildersleeve, Tazewell	Lynchburg	1901
*Dr. R. S. Martin, Stuart	Newport News	1902
*Dr. J. N. Upshur, Richmond	Roanoke	1903
*Dr. Joseph A. Gale, Roanoke	Richmond	1904
*Dr. Wm. S. Christian, Urbanna	Norfolk	1905
Dr. Lomax Gwathmey, Norfolk	Charlottesville	1906
*Dr. Paul B. Barringer, Charlottesville	Chase City	1907
*Dr. Wm. F. Drewry, Petersburg	Richmond	1908
Dr. Stuart McGuire, Richmond	Roanoke	1909
*Dr. E. T. Brady, Abingdon	Norfolk	1910
*Dr. O. C. Wright, Jarratt	Richmond	1911
*Dr. Hugh M. Taylor, Richmond	Norfolk	1912
*Dr. Southgate Leigh, Norfolk	Lynchburg	1913
*Dr. Stephen Harnsberger, Catlett	Washington, D. C.	1914
*Dr. Samuel Lile, Lynchburg	Richmond	1915

PRESIDENT	PLACE OF MEETING	YEAR OF MEETING
*Dr. Joseph A. White, Richmond	Norfolk	1916
*Dr. Geo. A. Stover, South Boston	Roanoke	1917
*Dr. E. G. Williams, Richmond	Richmond	1919†
*Dr. Paulus A. Irving, Farmville	Petersburg	1920
*Dr. Alfred L. Gray, Richmond	Lynchburg	1921
*Dr. E. C. S. Taliaferro, Norfolk	Norfolk	1922
*Dr. John Staige Davis, University	Roanoke	1923
*Dr. W. W. Chaffin, Pulaski	Staunton	1924
Dr. Hunter H. McGuire, Winchester	Richmond	1925
Dr. W. L. Harris, Norfolk	Norfolk	1926
Dr. J. Shelton Horsley, Richmond	Petersburg	1927
Dr. J. W. Preston, Roanoke	Danville	1928
Dr. J. Bolling Jones, Petersburg	Charlottesville	1929
*Dr. Charles R. Grandy, Norfolk	Norfolk	1930
*Dr. J. Allison Hodges, Richmond	Roanoke	1931
Dr. I. C. Harrison, Danville	Richmond	1932
*Dr. J. C. Flippin, University	Lynchburg	1933
Dr. R. D. Bates, Newtown	Alexandria	1934
Dr. F. H. Smith, Abingdon	Norfolk	1935
Dr. P. St. L. Moncure, Norfolk	Staunton	1936
Dr. J. M. Hutcheson, Richmond	Roanoke	1937
Dr. G. F. Simpson, Purcellville	Danville	1938
Dr. A. F. Robertson, Jr., Staunton	Richmond	1939
Dr. H. H. Trout, Roanoke	White Sulphur Springs, W. Va.	1940
Dr. W. B. Martin, Norfolk	Virginia Beach	1941

*Deceased.

†Owing to influenza epidemic and World War, meeting not held in 1918, and Dr. Williams continued as President.

Military and Naval Section

The following have been added to the list of

Examining Physicians on Local Boards

Dr. William Brown, Ruthville.
 Dr. John M. Davis, Paces.
 Dr. Charles W. Dorsey, Roanoke.
 Dr. C. S. Franklin, Ruthville.
 Dr. E. L. Grubbs, Front Royal.
 Dr. Paul W. Howle, Richmond.
 Dr. O. L. Huffman, Arvonion.
 Dr. D. M. Kipps, Front Royal.
 Dr. M. M. Lewis (Col.), Richmond.
 Dr. J. O. Marcy, Bristol.
 Dr. E. Sheridan Roane (Col.), Richmond.
 Dr. D. B. Stuart, Roanoke.
 Dr. L. K. Woodward, Jr., Front Royal.
 Dr. Charles M. Irvin, Roanoke.
 Dr. W. E. Lynn, Front Royal.

Medical Reserve Officers

The following additional medical reserve corps officers have been ordered to extended active duty by the War Department, Washington, D. C.:

Lieut. John Tallman Jarrett, Richmond.
 Lieut. Paul E. Ruuska, Richmond.

The following have been ordered to extended active duty by the Commanding General of the Third Corps Area:

Capt. Joseph John Kanich, Richmond—Ft. Ordlethorp, Ga.

Capt. John Kulczycki, Richmond—Camp Blanding, Fla.

Capt. Samuel Harold Malkin, Bedford—Camp Claiborne, La.

Capt. Paul McFarlane, Scottsville—Ft. George G. Meade, Md.

Lieut. John T. B. Ambler, Roanoke—Camp Lee.

Lieut. Edward Phelps Ambrose, Jr., Radford—Camp Lee.

Lieut. Morton M. Gratz, Appomattox—Camp Claiborne, La.

Lieut. Harry H. Henderson, Richmond—Camp Lee.

Lieut. Edward Rattne, Elkton—Ft. George G. Meade, Md.

Lieut. Solomon Singer, Jonesville—Camp Claiborne, La.

Lieut. William G. Sorrell, Amelia—New Cumberland, Pa.

Lieut. E. Bowie Shepherd of Richmond has been promoted to the rank of Captain, and is at Station Hospital, Ft. Moultrie, S. C.

Lieut. Robert J. Scott, class of '40, Medical College of Virginia, is located at Camp Grant, Ill., where he is assigned to Company "C" of the 31st Medical Training Battalion.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. GRIFFIN W. HOLLAND, Eastville.

President-Elect—MRS. E. LATANE FLANAGAN, Richmond.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. J. WALKER JACKSON, Machipongo.

Parliamentarian—MRS. JAMES B. STONE, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Suggestions for State Managers of Circulation of the Bulletin.

DEAR FELLOW WORKERS:

The Woman's Auxiliary has grown until it has a membership of over 27,000. During these critical times when American medicine is confronted with developments which threaten its established principles, it is extremely important that the Woman's Auxiliary conduct its affairs in such manner as to bring no reflection on the ideals of the parent body. To this end the members of our organization as well as the officers and chairmen who manage its affairs should be well informed concerning all plans and policies. They should also keep abreast of the times regarding those questions which are of interest to the medical profession.

The BULLETIN of the Woman's Auxiliary is the official organ of our organization just as is *The Journal of the American Medical Association* for that organization. From now on official programs of standing committees will be printed in the BULLETIN instead of in leaflets as formerly. This plan will eliminate much printing and postage expense. The programs will reach state and county officers at the same time, making it easier for state officers to plan the work with the officers of county Auxiliaries earlier in the summer. All officers will have just one pamphlet for reference instead of several which will also mean greater coordination of effort and less overlapping in planning program activities.

Besides the programs, each issue of the BULLETIN will contain information relative to home defense measures, nutritional education or Pan-American unity. The committee on Press and Publicity promises interesting and valuable material for each issue.

The following instructions may be found helpful in creating interest in the BULLETIN:

1. Ask the county president to appoint a chairman of BULLETIN.
2. Have a table at the annual State meeting where subscriptions may be taken. (*Presidents-Elect should promote this idea*).
3. Request the Editor of the official Auxiliary publication to print the "Important Notice".
4. Request the Chairman of Press and Publicity to include this notice in the Auxiliary notes sent to the State Journal.
5. Request County Chairmen to give a brief review of the post-convention issue of the BULLETIN at the first Auxiliary meeting in the fall.
6. Plan for county chairmen a simple but adequate system of keeping records so that an exact report of new and renewed subscriptions may be sent to the national chairman when desired.
7. Copies of the notice, receipt blanks and other available material will be sent to you upon request.

Your earnest cooperation in the matter of increased circulation of the BULLETIN will be appreciated.

MRS. CHARLES H. WERNER,

Circulation Manager, Auxiliary to the A.M.A.

Important Notice.

Extra copies of the post convention issue of the BULLETIN of the Woman's Auxiliary are available. You may begin your subscription with this issue if you desire. It is an interesting and valuable number, containing four of the major programs of the national Organization which have to do with plans for home defense.

It is the plan of the national board to use the official publication to present all important material to the members of the Woman's Auxiliary. All issues of the Bulletin will contain, therefore, important programs and articles presenting information necessary for the efficient promotion of our Auxiliary projects. Subscribers are entitled to four issues of the Bulletin for one dollar. Please indicate the issue with which you wish your subscription to *start*, and mail at once to Mrs. Charles H. Werner, Circulation Manager, 531 N. 24th Street, St. Joseph, Missouri.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

The Care of the Aged. (Geriatrics) By MALFORD W. THEWLIS, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, R. I.; etc. Third Edition. Entirely Rewritten. St. Louis. The C. V. Mosby Company. 1941. Octavo of 579 pages. With 50 illustrations. Cloth. Price \$6.00.

Body Mechanics in Health and Disease. By JOEL E. GOLDTHWAIT, M.D., F. A. C. S., LL.D.; LLOYD T. BROWN, M.D., F.A.C.S.; LORING T. SWAIM, M.D.; JOHN G. KUHN, M.D., F.A.C.S. With a Chapter on the Heart and Circulation as Related to Body Mechanics by WILLIAM J. KERR, M.D., F.A.C.P. Philadelphia. J. B. Lippincott Company. 1941. Third Edition. Completely Revised and Reset. Octavo of xiv-316 pages. 121 illustrations. Cloth. Price \$5.00.

Necropsy. A Guide for Students of Anatomic Pathology. By BELA HALPERT, M.D., Assistant Professor of Pathology and Bacteriology, Louisiana State University School of Medicine, and Visiting Pathologist, Charity Hospital of Louisiana at New Orleans. St. Louis. The C. V. Mosby Company. 1941. 75 pages. Cloth. Price \$1.50.

Manual of the Diseases of the Eye. For Students and General Practitioners. By CHARLES H. MAY, M.D., Consulting Ophthalmologist to Bellevue, Mt. Sinai and French Hospitals, New York; etc. Seventeenth Edition. Revised with the Assistance of CHARLES A. PERERA, M.D., Associate in Ophthalmology, College of Physicians and Surgeons, Medical Department of Columbia University, New York; etc. Baltimore, William Wood and Company. 1941. viii-519 pages. With 387 illustrations including 32 Color Plates, with 93 Colored Figures. Cloth. Price \$4.00.

Microbes Which Help Or Destroy Us. By PAUL W. ALLEN, Ph.D., Professor of Bacteriology and Head of the Department University of Tennessee; D. FRANK HOLTMAN, Ph.D., Associate Professor of Bacteriology, University of Tennessee; and LOUISE ALLEN McBEE, M.S., Formerly Assistant in Bacteriology, University of Tennessee. St. Louis. The C. V. Mosby Company. 1941. 540 pages. With 102 text illustrations and 13 color plates. Cloth. Price \$3.50.

Essentials of General Surgery. By WALLACE P. RITCHIE, M.D., Clinical Assistant Professor, Department of Surgery, University of Minnesota Medical School. St. Louis. The C. V. Mosby Company. 813 pages. With 237 illustrations. Cloth. Price \$8.50.

The Complete Weight Reducer. By C. J. Gerling. Harvest House. New York. 1941. Octavo of 246 pages. Cloth. Price \$3.00.

Cardiac Clinics. A Mayo Clinic Monography. By FREDERICK A. WILLIUS, B.S., M.D., M.S. in Med., Head of Section of Cardiology, Mayo Clinic, and Professor of Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester. St. Louis. The C. V. Mosby Company. 1941. 276 pages. Illustrated. Cloth. Price \$4.00.

Synopsis of Applied Pathological Chemistry. By JEROME E. ANDES, M.S., Ph.D., M.D., F.A.C.P., Director of Department of Health and Medical Advisor, University of Arizona, Tucson; etc. And A. G. EATON, B.S., M.A., Ph.D., Assistant Professor of Physiology, Louisiana State University School of Medicine, New Orleans. St. Louis. The C. V. Mosby Company. 1941. 428 pages. With 23 illustrations. Cloth. Price \$4.00.

Handbook of Communicable Diseases. By FRANK H. TOP, A.B., M.D., M.P.H., Director, Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health; Associate Professor of Preventive Medicine and Public Health, Wayne University, College of Medicine; etc. And Collaborators. St. Louis. The C. V. Mosby Company. 1941. 682 pages. With 73 text illustrations and 10 color plates. Cloth. Price \$7.50.

The March of Medicine. New York Academy of Medicine Lectures to the Laity, 1940. Columbia University Press. New York. 1941. xii-154 pages. Cloth. Price \$2.00.

This book is the fifth of a series of lectures sponsored by the New York Academy of Medicine and presented to the laity. They are presented to give the public an appreciation of the background of advances being made in many fields of medicine.

Six lectures are included in the series. Perrin Long traces the fascinating history of the sulfonamide drugs from the suggestion of Fritz Mietzsch, of the German Dye Trust that prontosil be tried experimentally in bacterial infections to 1940. Two lectures deal with psychiatry. Abraham Myerson discusses the inheritance factor in various types of mental disease. In "The Ascent from Bedlam", Richard Hutchings traces evolution of our ideas concerning insanity and with it the development of institutions for care of the insane. The story of our knowledge of the blood is traced by Paul Reznikoff from the time of Goethe, when all that could be said was that, "Blood is indeed a peculiar fluid". In the story of the viruses the ever-inspiring story of the conquest of yellow fever is retold by Thomas Rivers. Chevalier Jackson presents the romance of bronchoscopy in the final lecture.

Though written for the laity, these subjects are presented in such a fashion as to make two hours interesting reading for the medical profession.

L. T. STONEBURNER, III.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.

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No. 10

Editorial

In Search of Colonial Medicine in Williamsburg

THE Williamsburg Restoration has been carried out in the grand manner. Virginia is proud of Mr. Rockefeller's gift to the State in restoring and preserving its heritage. There is every evidence to show that the work of reproducing the colonial capital has been done as the result of instructions to spare no expense and no pains. No one questions the vastness of the undertaking nor its accuracy in the smallest detail. So much has been given the citizens of Virginia that we should hesitate to ask for more were our request not a testimony to our appreciation of the little city's value to our present-day living and teaching.

We all know that there were three great professions honored and respected by our forefathers of the Williamsburg period: the Law, the Ministry and Medicine. One does not have to go far in Williamsburg today to be convinced of the power and prestige of the law in the Eighteenth Century. The capitol where the law was made, the courthouse where the law was enforced, the public goal and stocks where the law-breaker was punished, as well as the home of one of the law's great champions, George Wythe, are all proudly shown the Williamsburg visitor. The church of colonial days is beautifully and adequately revealed in the restored Bruton Parish Church and its quiet graveyard.

What would the visitor to Williamsburg be shown if he asked to see those things that reflect the medicine of this by-gone day? He would, no doubt, be told that the Eastern State Hospital on the outskirts of the city—for the removal of which to more distant parts there has naturally been considerable agitation—is the oldest institution devoted to the care of mental disease in the United States, and that here, too, the treatment of the colored insane was first provided for. He would be shown the cottage of James Galt, the first keeper of the asylum, which now stands on Duke of Gloucester Street to which it was removed in 1929.

Some of Williamsburg's leading citizens and landowners were physicians: John Amson, Andrew and Robert Anderson, Philip Barraud, Archibald Blair, Charles and John Brown, James and William Carter, Robert Davidson, John Dixon, James and John Galt, Robert Garrett, the George Gilmers (father and son), Samuel Griffin, Peter Hay, Kenneth Mackenzie, Robert Nicholson, William Pasteur, George Pitt and Robert Waller—to recall a few; but while their names linger on in the records, for the most part the places where they dwelt know them no more.

The medical man in search of medical items of interest in colonial Williamsburg would be interested to know that the Raleigh Tavern was built by the physician, Archibald Blair, and that it was later owned by another physician, Dr. George Gilmer. When he is shown the Wren Building at William and Mary College, the medical visitor would like to be told that here James McClurg, graduate of Edinburgh, later first Mayor of Richmond, first president of the Medical Society of Virginia, and a member of the Constitutional Convention, gave the first formal lectures in medicine ever delivered to students in this State.

The doctor who visits the restored Capitol and Palace and the grounds of William and Mary College should be told something about their medical history. Williamsburg was one of the most important Revolutionary hospital centers, especially towards the end of the war and during the Yorktown campaign. He might be told about the Vineyard Hospital which stood on the York Road just outside of the city and that the Capitol, the Palace and the College housed the sick and wounded of the Continental Army. The Restoration undoubtedly wishes they had not, for if it had not been for the fact that Revolutionary hospitals were set up in these old buildings, the Restoration's work would have been much simpler than it proved to be. Careless Revolutionary soldiers were responsible for the burning of the Palace in 1781, and for the destruction by fire of the College President's House and one of the wings of the College. In the Civil War, the Court House, the Baptist Church, Bruton Parish Church and many private dwellings were converted into temporary hospitals, and the main building of the College was used for a hospital in 1861 by Confederate troops and in 1862 by Federal troops.

The medical minded visitor, especially if he has seen the Hugh Mercer apothecary shop in Fredericksburg, the Leadbetter Shop in Alexandria, or that unique preservation of the apothecary's art at the Medical College of Virginia in Richmond, will naturally hope to be shown an apothecary shop in Williamsburg. Williamsburg of this period was not without its apothecary shops. There were many. There was Andrew Anderson's *Sign of the Golden Ball* and James Carter's *Unicorn's Horn* and George Pitt's *Sign of the Rhinoceros* as well as other shops—names have not been preserved if they ever boasted names—which were operated by William Biers, William Carter, Richard Couthard, Robert Davidson, John Galt, the two Gilmers, Peter Hay, and William Pasteur.

Dr. Archibald Blair's shop, dating from 1717, has been restored. It is the oldest apothecary shop in the State. Unfortunately, the interior has not been restored, but has been diverted to other uses. Where once the colorful carboys, brass scales, pounding mortars, bottles large and small, and pungent odors conspired to create an atmosphere that was part of the medicine of its day, a peruker, plying a trade equally quaint to us, makes and repairs the wigs worn by the costumed hostesses, guides and servitors of the Restoration. No doubt the corporation will change all this in time. Until that day one must be content to look upon the exterior of Blair's old establishment while reconstructing in his mind, as best he can, its interior.

It is at this point that medicine in Virginia, conscious of its debt to the Rockefeller Restoration, must, like a greedy child to whom much has been given, hold out its hands for more. Our profession is at the cross roads of its destiny and it must plead for the preservation of every visible sign of its olden days, that it may know what it has been in order to know what it should be, that it may learn what to hold fast and what to let go.

News Notes

ANNUAL MEETING MEDICAL SOCIETY OF VIRGINIA

Virginia Beach

October 6, 7 and 8, 1941

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Medical College of Virginia News.

Convocation exercises opening the one hundred fourth session of the college were held at 12 noon, September 15, at the Monumental Church. President Sanger presided and talks were made by the four deans, the secretary-treasurer, the president of the student body, and the president of the college Y. M. C. A. Reverend George Ossman, rector of the church, gave the invocation and benediction.

Dr. Lewis E. Jarrett, director of the hospital division, attended the annual meeting of the American Hospital Association, September 13-17, in Atlantic City.

The United States Public Health Service has made a grant of \$3,000.00 for the Saint Philip school of nursing and \$12,350.00 for the college school of nursing.

The Crockett Memorial Laboratory was dedicated with appropriate exercises on the afternoon of September 15 at three o'clock. This laboratory was made possible by gifts from friends and former students of the late Doctor Crockett, the pharmacy profession at large, and others. This laboratory will be used by junior and senior students of the school of pharmacy.

Dr. Thomas D. Rowe received his doctorate during the summer and has been made associate professor of pharmacy to succeed the late Dr. W. G. Crockett as head of the department.

Dr. Ralph A. Logan, Dr. Philip Modjeski, and Dr. E. P. Ferrari have joined the faculty of the dental school.

Dr. Ann T. Swing has been appointed B. Armistead Shepherd fellow in immunology for the current session.

The second symposium on industrial health was held at the college, September 10-12. The number in attendance exceeded last year and the meetings were most enthusiastic. Outstanding speakers from far and near were gathered for this program. It is hoped that this important feature of the work of the college may be continued.

It is expected that the superb piece of statuary given the institution by Mrs. Anna Hyatt Huntington, distinguished sculptress, will be received around October 5; the setting for the group, designed by Mr. Charles F. Gillette, Richmond landscape architect, is practically completed.

Dr. John M. Meredith has been appointed associate professor of neurological surgery, replacing Dr. W. Gayle Crutchfield, resigned. Doctor Crutchfield has accepted the professorship of neurological surgery at the University of Virginia.

University Post-Graduate Clinic.

The Post-Graduate Clinic will be held at the University of Virginia Hospital on December 2, 3, 4 and 5. The first two days will be devoted to Ophthalmology and among the speakers will be Dr. Reese of New York and Dr. Gradle of Chicago. The last two days will be given to Otolaryngology with Dr. Clerf and Dr. Houser of Philadelphia appearing on the program along with Dr. Lehman and Dr. Landis of the University of Virginia. The completed program will be ready in November.

Duke University Symposium.

The Duke University School of Medicine and Duke Hospital, Durham, N. C., will conduct its annual symposium on October 16-18, the subject being "Problems of Civil and Military Emergencies". A

program presented by nationally known authorities on their subjects has been arranged. Emergency treatments, bone and joint surgery, injury of the nervous system, nutrition problems during crisis, epidemics, the use of new drugs such as sulfonamides, and defense problems will be discussed. The committee in charge of the program is headed by Dr. Lenox D. Baker.

In order for the visiting doctors to meet the speakers and to have a social evening together, a buffet dinner is to be given on Friday evening. The meeting will be closed with the Colgate-Duke football game for which seats may be obtained in a special section reserved for doctors registered at the symposium, by making application direct to the Duke Athletic Association prior to October 11.

A cordial invitation is extended the members of the medical profession to attend this symposium.

Dr. J. R. Chitwood,

Formerly of Ivanhoe and Wytheville, who recently completed a two-year residency in medicine, obstetrics and pediatrics at the City Hospital, Winston-Salem, N. C., is now located for general practice at Rainelle, W. Va.

Dr. Thornton Kell,

Recently of Bluefield, has located at Grundy.

Respirators or "Iron Lungs" Listed.

The National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York City, has issued a pamphlet which lists adult cabinet type respirators or "Iron Lungs" which have been approved by the Council on Physical Therapy of the American Medical Association. There are 852 of these listed in the United States, the following being in Virginia:

Charlottesville—University of Virginia Hospital.
Clifton Forge—Chesapeake and Ohio Hospital.
Covington—First Aid Crewe.
Lexington—T. K. I. Fraternity.
Lynchburg—Lynchburg General Hospital.
Martinsville—Shackelford Hospital.
Newport News—Riverside Hospital.
Norfolk—Hospital St. Vincent de Paul.
Portsmouth—Portsmouth Central Labor Union.
Pulaski—Pulaski Hospital.
Richmond—Medical College of Virginia Hospital.
Roanoke—Roanoke Life Saving Square.
Salem—First Aid Crewe.

Dr. C. E. Holderby,

Formerly of Williamsburg, has located in Newport News with offices in the Masonic Temple.

Dr. O. L. Huffman,

Class of '38, Medical College of Virginia, who has recently been practicing at Sugar Grove, W. Va., is now located at Arvonnia where he will be engaged in general practice.

Dr. C. M. Caravati

Will return to Richmond during October to engage in the practice of gastro-enterology, after being at the Johns-Hopkins Clinic for the past six months.

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons.

At the annual meeting of this Association held at the Homestead, Hot Springs, September 11-13, Dr. Grandison D. Royston, St. Louis, succeeded Dr. Fred H. Falls of Chicago as president; Dr. Willard R. Cooke, Galveston, was named president-elect, and Dr. W. A. Scott, Toronto, was re-elected secretary-treasurer. The next meeting will be held at White Sulphur Springs, W. Va., the second week in September, 1942.

"Depression or No Depression, War or No War."

Since 1930, month after month, a unique series of educational-to-the public advertisements have appeared on the first page of *Hygeia*. The sponsor's name, Mead Johnson & Company, has to be looked for with a magnifying glass, and appears only for copyright purposes. Not a product is ballyhooed. Instead, appears good, clean, convincing reasons, with choice illustrations, why mothers should seek pediatric advice *from their physicians*.

Forum on Allergy.

The fourth annual forum on Allergy will be held in Detroit on January 10 and 11, 1942.

The American Colleges of Physicians

Announces its twenty-sixth annual session will be held in St. Paul, Minn., on April 20-24, 1942. Dr. Roger I. Lee, Boston, is President of the College and will be in charge of the program of general sessions and lectures. Dr. John A. Lepak, of St. Paul, has been appointed general chairman. Mr. E. R. Loveland, Philadelphia, is executive secretary of the College.

American Conference on Industrial Health.

Under the auspices of the American Association of Industrial Physicians and Surgeons, the American Conference on Industrial Health will hold its

second annual meeting on November 5th and 6th at Chicago.

Petrolagar—Now Petrogalar.

A change in the spelling of the name "Petrolagar" to "Petrogalar" has been announced by the Petrogalar Laboratories. The change is being made in both the product name and corporate name.

Company officials, while pointing out that the adoption of the new spelling does not affect the formula or quality of the product in any way, said that they considered the change advisable to avoid any possible misconception as to the nature of the product, "Because it has never been the intention of the company to imply that agar-agar was used for any other purpose than as an emulsifying agent, the last syllable of the former name has been altered in favor of the new spelling".

Officials emphasized that no change has been made in the size of the package, price, or formulae and that each of the five different types of the product will carry the new spelling "Petrogalar". The new corporate names is: Petrogalar Laboratories, Inc., and the address remains, 8134 McCormick Boulevard, Chicago, Illinois.

Dr. Hawes Campbell, Jr.,

For sometime of Hanover, has moved to Gary, W. Va., where he is associated with the United States Steel Corporation.

Dr. and Mrs. A. D. Parsons

And daughter of Richlands spent their vacation at Wrightsville Beach, N. C. With them were Dr. E. S. Parsons and family of South Boston and Dr. and Mrs. George W. Parsons, now of Texarkana, Arkansas-Texas.

Married.

Dr. James Mercer Moss, class of '41, University of Virginia, and Miss Rachel Scott Bybee of Charlottesville, September 6. Dr. Moss, formerly of Arlington, is now serving an internship at the University of Virginia Hospital.

British RAF Psychiatrist to Lecture in United States.

One of England's foremost specialists in psychiatry and neurology, Dr. R. D. Gillespie, has been granted a leave of absence from the RAF by the British Government to report to the American medical profession his first-hand observations on the psy-

chological effects of "blitz" warfare on armed forces and civilian population.

Dr. Gillespie, who is now chief psychiatrist for the British Royal Air Force, is coming to this country at the request of the Salmon Committee on Psychiatry and Mental Hygiene of the New York Academy of Medicine. He will deliver the Salmon Memorial Lecture in the New York Academy building November 17, 18 and 19, speaking on "Psychoneuroses from the Standpoint of War Experience".

The New York lectures will be followed by addresses before the Chicago Neurological Society, the Chicago Institute of Medicine and the Illinois Psychiatric Society in Chicago. Dates for these lectures as well as lectures in Toronto, Ontario and San Francisco, California, will be announced later.

Dr. Charles Burlingame, chairman of the Salmon Committee which each year chooses an outstanding specialist in psychiatry, neurology or mental hygiene for the Salmon Memorial Lecture, has issued a general invitation on behalf of the committee to members of the medical profession and their friends to attend.

Dr. D. F. Love,

Formerly of Harman in Buchanan County, is now located at New Market.

Dr. W. A. Mitchell,

University of Virginia, Class of '38, has opened offices at 33rd and West Avenue, Newport News, where he will limit his practice to pediatrics. He has recently completed a two-year residency at the Medical College of Virginia Hospitals.

Dr. Horsley Honored.

At the meeting of the American Association for the Study of Neoplastic Diseases in Washington, September 4-6, a banquet in honor of Dr. J. Shelton Horsley, Richmond, was held on the 5th. Dr. Roscoe W. Teahan of Philadelphia, President of the Association, was the toastmaster, and there were about sixty-five present at the banquet. Speeches were made by Dr. Louisa T. Keasbey, Pathologist at the Lancaster General Hospital, Lancaster, Pennsylvania; Dr. Harvey E. Jordan, Dean of Medicine at the University of Virginia; Dr. I. A. Bigger, Professor of Surgery at the Medical College of Virginia; Dr. Harry Kerr, Surgeon at the Garfield Hospital in Washington; and by the President of the Washington Medical Society and President of the Washington Pathological Society.

Dr. William C. Moomaw,

Formerly of Port Chester, N. Y., has returned to Virginia and is now in Bedford where he will limit his practice to eye, ear, nose and throat.

Association of Military Surgeons of the United States.

The annual meeting of this Association, is to be held in Louisville, Ky., October 29 to November 1, with headquarters at the Brown Hotel. Because of the many changes in war medicine and surgery in the past few years, and even months, and the interest in all things pertaining to military matters, this meeting promises to be of unusual importance. The session concludes with a mass review of Military Medicine and an inspection of Fort Knox.

All members of the medical profession are invited and it is particularly hoped that as many members of the Medical Defense Committees as possible will arrange to attend.

Dr. P. W. Miles

Of Danville has been elected chairman of the Recreation Commission of that city.

Dr. Eugene M. Landis,

Professor of Internal Medicine at the University of Virginia, was the guest speaker at the meeting of the Medical Society of Northern Virginia in Winchester, on September the 9th, his subject being "Practical Aspects of Kidney Function Tests".

Dr. Edwin F. Gouldman,

Colonial Beach, after a nine months' graduate course in obstetrics and gynecology at the New York Medical College, is now serving as assistant resident in obstetrics and gynecology in Flower and Fifth Avenue Hospitals, New York City.

Dr. Charles W. Robertson,

Recently of Massachusetts, has located at Alberta and taken over the practice of the late Dr. L. A. Law.

Obituary Record

Dr. Samuel Meredith Wilson,

Prominent Lynchburg pediatrician, died September the 14th, at the age of fifty-six. He was a native

of Petersburg and graduated from the former University College of Medicine, Richmond, in 1907, later taking post-graduate work at Harvard and Johns Hopkins. After a short time in West Virginia, he located in Lynchburg where he had been for the past thirty years. He was a member of the Medical Society of Virginia and of a number of other organizations. His wife and a daughter survive him.

Dr. William Witmer Kerns,

Well-known physician of Bloxom, died August 28. He was a native of Gloucester County and seventy years of age. Dr. Kerns graduated from the former University College of Medicine, Richmond, in 1896. He was active in the civic affairs of Bloxom and was a past president of the Accomac County Medical Society. Dr. Kerns joined the Medical Society of Virginia in 1897. Two sons survive him.

Dr. Bolivar Buchanan McCutchan,

Clifton Forge, died September 9, after a short illness. He was born in 1871 and graduated from the former University College of Medicine, Richmond, in 1895. Dr. McCutchan practiced for a short time in Pittsylvania County but located at Clifton Forge in 1903. He had been a member of the Medical Society of Virginia forty-two years. His wife and three children survive him.

Dr. Wiley Aven Preston,

Abingdon, died August 27, after an illness of several months. He was thirty-seven years of age and graduated from the Medical College of Virginia in June of this year. His wife survives him.

Dr. Miles Parker Omohundro,

Washington, D. C., died July the 28th, at the age of forty-five years. He was born at Montross, Va., and, upon completion of his academic work at William and Mary College, entered the University of Virginia, from which he graduated in medicine in 1922. Later, he obtained a fellowship in urology at the Mayo Clinic, following which he located in Washington, to practice this specialty. His wife and a daughter survive him.

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The Council, through N. N. R. and in other ways, augments the work of the U. S. Pharmacopoeia, testing and evaluating scores of new products which appear during the 10-year interim between Pharmacopoeial revisions.

We are conscious of the fact that the Council has at times been criticized both in and out of the medical profession. We hold no brief for perfection in any human agency. But we subscribe to the fact that the work of the Council is sound in principle; and in this high-pressure day and age, we shudder to think of a return to the unrestrained patent-medicine-quack-nostrum conditions of three decades ago, when there was chaos instead of Council.



MEAD JOHNSON & COMPANY
EVANSVILLE, IND., U.S.A.

VIRGINIA MEDICAL MONTHLY

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Annual Meeting—Medical Society of Virginia
Roanoke, October, 1942

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Official Publication of the Medical Society of Virginia

Vol. 68, No. 11.
WHOLE No. 1073.

RICHMOND, VA., NOVEMBER, 1941

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Guest Editorial

Vitamin K

THE historical development of vitamin K has been recounted so frequently that nearly every physician is well acquainted with the story. In less than five years after vitamin K was discovered, its value as well as its limitation was definitely established. Its first and probably most important therapeutic use is in the prevention and cure of the bleeding in obstructive jaundice. Since the hypoprothrombinemia in this condition is due to inadequate absorption of vitamin K because of the absence of bile in the intestines, bile salts must be administered with vitamin K if the latter is given orally.

The second important use of vitamin K is as a prophylactic against bleeding in the newborn infant. Nearly all babies have a brief period of prothrombinopenia soon after birth, but only in a small percentage does this lead to a serious hemorrhagic condition. The potential danger is nevertheless present and to eliminate this hazard the administration of vitamin K, either to the mother shortly before parturition, or to the baby soon after birth, is definitely indicated.

Several other conditions are benefited by vitamin K. Prothrombin synthesis is markedly reduced after severe liver injury, and in some instances, notably in acute yellow atrophy, this may cause a serious hemorrhagic tendency. Vitamin K together with means to restore liver function is the only rational therapy. Any condition such as sprue or biliary fistula which interferes with the absorption of vitamin K will bring about a drop in the prothrombin level. In such cases the parenteral administration of vitamin K is most satisfactory.

Vitamin K is indicated only in those diseases in which a diminution of prothrombin of the blood can be demonstrated. It is totally worthless in purpura, hemophilia, telangiectasia, and other hemorrhagic diseases in which the prothrombin of the blood is normal.

Much progress has been made in developing the chemistry of vitamin K. Two of the naturally occurring vitamin K's have been isolated, identified, and synthesized. Of greatest practical importance has been the discovery that 2 methyl 1, 4 naphthoquinone has the highest vitamin K potency. It and its derivatives have practically displaced all other preparations. It can be administered orally, intramuscularly, intravenously and by inunction.

Vitamin K has solved the problem of an important group of hemorrhagic diseases. It has done even more, for it has stimulated a renewed interest in coagulation and has given new hope that successful treatment for other bleeding diseases will ultimately be found.

ARMAND J. QUICK,
*Associate Professor Pharmacology,
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ORGANIZED MEDICINE AND PUBLIC WELFARE*

WALTER B. MARTIN, M.D.,

Norfolk, Virginia.

Just one year ago you did me the honor of elevating me to the high office of President of the Medical Society of Virginia. This is no mean distinction and for this evidence of your regard and confidence I am deeply grateful.

The time has now come for me to give some accounting of my stewardship. In certain societies it is the custom for the president to make an address on taking office, but I believe our tradition is the better one. A year of such service brings one into close contact with most of the problems of organized medicine. With such a background the presidents from year to year can bring to you the results of their experience.

This has been a busy year and I want to express my appreciation of the cooperative attitude of all of those who have served with me. The administrative force, the councilors, and the committee members have all done their part well. Whatever may have been accomplished is in a large measure due to their loyal support.

We are met here today as the representatives of organized medicine in Virginia. As individuals we are engaged in the practice of medicine in its various branches throughout the state and we meet to exchange views and to profit by each other's experiences. We also meet to consider problems affecting the public welfare.

Ours is an old organization. There is evidence that the Medical Society of Virginia held its first meeting in 1821 and was chartered by the Legislature of Virginia in 1824. But we are only one of many medical groups in this country. They range from our national society down to the state and local component county societies and include many regional and special groups. All of these make up the body of organized medicine. Thousands of the best medical minds in the country devote much of their time and energy to furthering the purposes of these various societies.

But there are some who will say, why organize? For what purpose do the physicians of Virginia and the United States band themselves together?

*Address of the President delivered before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

Is it to promote their selfish interests, to improve their economic status, to fix fees, or to influence legislative action favorable to themselves? None of these is true. The real basis of medical organization is set forth in the constitution of the American Medical Association and in that of our own State Society, namely, "to promote the science and art of medicine and the betterment of public health". In these few words are expressed the ideals of organized medicine in America, whether they are those of the great national society made up of more than 118,000 qualified physicians, our state societies, our component local groups, or those organizations representing the various divisions of specialists in medicine.

Throughout the years organized medicine has constantly concerned itself with problems relating to public welfare. In recent decades, with the development of industrial life, these problems have become more numerous and more complex. In the simpler life of a generation or more ago the family physician occupied an unique position in many communities. The area of his practice was limited by his ability to cover it in a horse and buggy or on horseback. His clientele was more fixed and he lived out his life among the small group that he served. He was not only a healer of disease but often an arbitrator of many other matters. He was interested in the general welfare of his community and was the final word on all questions relating not only to the health of his patients but also to the general health of the community. Medical economics had not been heard of then, but he knew his people and he adjusted his fees in accordance with their ability to pay. His medical resources were small as compared to the expensive and complicated equipment of today, but it was equal to that possessed by most other men of his day and he measured out equivalent medical care to the rich and poor alike.

The whole picture has changed now. The vast industrial expansion that has taken place, the rise of great cities with their shifting populations, the great advances in the science of medicine with the tremendous increase in instruments of precision and

of special procedure of various kinds, has complicated the situation. The modern physician's patients come and go. He is no longer the trusted advisor of a group for whose health he is responsible. If he is to practice good medicine he must possess, or have access to, modern equipment. He cannot do this alone without prohibitive expense, so he has grouped himself with others around hospitals and diagnostic clinics. In doing this he has to a certain extent sunk his identity and no longer commands the loyal allegiance of a certain group, as did his father.

The patient's dilemma is even more difficult. In choosing a physician he is largely guided by chance as he considers the wide assortment of practitioners and specialists, and seeks the one best suited to treat the condition that he considers himself to have. The truth is that neither the patient nor the individual doctor can solve this problem and it is only through organized medicine that it can be approached intelligently. Since this is true and since it is so often impossible for the layman to evaluate the qualifications of physicians, especially those supposedly possessed of expert knowledge in special fields, it becomes necessary that the lay public be protected by law and by regulation inside the body of medicine itself. Since medicine is one of the learned professions, only the profession itself is fully qualified to judge the competency of its members. Even in setting up legal standards for practice it is necessary for law-making bodies to consider well the opinion of the medical profession. Organized medicine is the medium through which the considered opinion of medicine is expressed and is an essential factor in a complicated civilization such as ours, if the welfare of the public is to be protected.

The first requisite of medicine from the standpoint of public welfare is that it shall be of good quality. For this reason down through the years organized medicine has urged upon various legislative bodies the necessity of enacting and enforcing adequate medical practice acts. The purpose of such acts is not to protect the physicians but to safeguard the public. These medical practice acts lay down certain qualifications that each physician must have before he can practice the art and science of healing.

Medicine today is the product of the scientific achievements of the ages. The medical student

now more often than not has spent four years in college before he undertakes the four-year course in medicine. He is well grounded in the basic sciences of chemistry, biology, and physics. After receiving his medical degree he spends one to four years in a well organized hospital where he sees the practical application of all that he has been taught. Then, and then only, is he adjudged to be properly equipped to undertake the grave responsibility of treating the sick.

The various states have provided in their laws for the examination of such candidates as meet their requirements and those who can pass these examinations are duly licensed to practice medicine in any of its branches. The law of our state requires that any one who undertakes to treat the sick shall be properly equipped by training and experience. Unfortunately for the public, there are in this state, as in others, a number of untrained individuals who have undertaken to practice outside of the law. Ignorant or venial, they menace not the medical profession but the public health.

The State Board of Medical Examiners is charged with the duty of seeing that the law is carried out, but it is provided with scant funds and is not an enforcement agency. It has discharged its duties well, within the limitation of its power. The duty of enforcing the Medical Practice Act is placed on the constituted enforcement officers of the Commonwealth, but this duty has often been neglected. Organized medicine, knowing the requirements of good medicine, feels compelled to exert its influence to eliminate these unqualified practitioners in the interest of the public welfare. We would prefer to be relieved of this unpleasant task. I would urge upon those legally responsible throughout the state the importance of enforcing fairly and rigidly the Medical Practice Act.

Organized medicine has gone a step further in protecting the public. Through its various societies it has established a code of ethics defining practices that must be avoided. Advertising or the solicitation of patients in any way is forbidden. The use of secret remedies or the receiving of profit from any medical discovery or invention is not allowed. Thus no limit is placed on the spread of medical knowledge and the public benefits in the widest possible manner from each medical advance. The purchase and resale of medical service for profit by a lay group and certain forms of contract practice are

forbidden, since such practices usually result in the deterioration of the quality of medical service and are contrary to sound public policy. All of these provisions are designed to maintain a high quality of medical service and to extend its benefits to the public.

Organized medicine through its special groups and societies has established standards and defined the qualifications that must be possessed by those undertaking the practice of any one of the specialties of medicine. These requirements as to training and experience go far beyond those defined by law for the practice of medicine. Thus the public is protected against the self-styled specialist and a constantly improving quality of practice is secured. Organized medicine, by its influence on medical education, by urging the enactment and enforcement of adequate medical practice acts, by its code of ethics designed to preserve the quality of medicine, and by the establishing of high standards for qualifications in special groups, has carried out the declaration in its constitution, namely, "to promote the art and science of medicine and to better the public health".

Organized medicine urged the formation of the first public health body in the United States and has consistently thrown the weight of its influence behind public health measures. Our House of Delegates has gone on record as favoring the extension of public health service—local, state, and national—so as to bring the benefits of preventive measures to all the people of the United States. We have repeatedly pointed out the importance of the economic factor in disease and its relationship to poverty, inadequate food, and over-crowded living conditions.

The American Medical Association, through its various councils and bureaus, is rendering a great service to the public. It is only necessary to enumerate these agencies to realize the scope and importance of their activities. The Council on Medical Education and Hospitals has long been engaged in furthering the cause of medical education and in improving hospital standards. The Councils on Pharmacy and Chemistry, on Physical Therapy, and on Food and Nutrition have been, and are, performing a splendid service in evaluating new drugs and other therapeutic agents. The Council on Industrial Health has for years carried on studies of the special problems relating to health hazards in industry. It has accomplished much in further-

ing preventive measures against accident and disease. This work is of special importance at a time when industry is rapidly expanding to meet the urgent needs of our country.

Since the onset of the present emergency the American Medical Association, the individual state organizations, and the various special societies have been engaged in registering and evaluating the medical personnel in the United States. At the present time there is available to our Government information as to the number, the qualifications, and the availability for service in military, naval, or civilian practice, of those in every division of medicine. We hope that this information will be utilized. We are especially concerned over the medical aspect of the problems arising from the rapid expansion of our military and naval forces. We feel that the medical personnel selected for service in the armed forces should be chosen on the basis of demonstrated fitness for the duties to be performed. It seems improbable that the qualified experts in the many special branches of medicine needed to direct the departments of the numerous service hospitals are to be found in sufficient numbers among those under thirty-five years of age.

The other important consideration is the protection of civilian health, especially in those areas where defense activities are centered. Without some definite plan, the withdrawal of a large number of nurses and physicians from certain areas may work a great hardship and seriously retard defense activities. It seems obvious that only by a selective quota system can the armed forces be supplied with a properly qualified personnel and, at the same time, the medical needs of the civilian population be protected.

During the past decade one of the principal problems facing our profession has been related to the distribution of good medical care. It is fully recognized that in some areas and in certain strata of society medical care is inadequate. Intensive study has been given this subject by many state and local societies. The perfect answer has not been found. Certainly, the answer does not lie in any of the grandiose plans so far suggested by certain socially minded individuals and groups. Certainly, it does not lie in any plan that would lead to the dilution of the quality of medicine or that would hinder the continued advance of the science of medicine. Much has been accomplished in the limited field of hospital

care by various non-profit hospital service plans supported by medical organizations all over the country. Much yet remains to be done to effect an equitable spread of good medical service. The delusion still persists that good medical care can be produced cheaply, when in truth it is an expensive product even if all professional fees were eliminated. The inherent cost factor is the overhead involved in the purchase, maintenance, and operation of the varied equipment necessary in modern medicine. The answer would seem to lie in subsidizing these accessories of medicine. By adequate support of well-equipped hospitals and diagnostic centers all of the scientific resources of medicine could be made available to the practicing physician and through him to his patient.

There are two matters that I would like to bring to your attention that seem to me to be most important. The present method of providing medical care to jail prisoners in this state is a disgrace to the Commonwealth. We have an antiquated fee system based on prescription writing, which opens a wide avenue of abuse to conscienceless individuals and does not properly compensate those who attempt to give good service. Our coroner system has long outlived its usefulness and the coroner should be eliminated to make way for properly qualified medical examiners. I recommend that the House of Delegates authorize the appointment of a committee to confer with a committee from the Bar Association for the purpose of working out concrete proposals on these two suggestions.

During the past year the Council, on the recommendation of your President, authorized the formation of district councils. These councils are made up of representatives from each county in the district and will serve a most useful purpose in our organization. They will be a channel through which each locality can form contact with the State Society and they will enable the State Society to bring matters quickly to the attention of the local groups. The action of our Council has only temporary effect and in order to put these district councils on a permanent basis, it will be necessary that there be an appropriate change in the Constitution. I strongly recommend that this change be made.

As a corollary to this, I recommend that the state be divided into ten councillor districts instead of nine as a basis of representation in the Council of the State Society. The present nine congressional

districts have been so distorted for political purposes that they do not form convenient units. It is thought that by rearranging the counties into districts which are geographically contiguous the operation of the district councils will be much more practical.

I have reviewed some of these achievements and purposes of organized medicine in no spirit of controversy. In a complex civilization, only through organization can the quality of medicine be maintained and improved. I am persuaded that the welfare of the American people is closely bound up with the preservation of the quality of medicine. There are many debatable questions in the field of social medicine today and in the past we have engaged in certain disputes. I would urge that for the present at least all controversy be adjourned. Our country is engaged in a mighty defense effort. I am confident that I speak for the physicians of this state when I say that we are ready to devote ourselves unreservedly to this cause, that we are ready to serve in whatever capacity we are needed, whether military or civil, until the purposes of our country are accomplished. But why should this conviction fill our minds and hearts? History records the destruction of the great Greco-Roman culture under the impact of the barbarians from the North. Then followed a thousand years of darkness, through which man again slowly struggled upward. Slowly did he build governments founded on law and justice. Slowly did he gain the right to worship God in his own way, to enjoy the fruits of his own labor, and to pass on to his children his heritage of freedom. The barbarians are again on the march. Already they have struck down many nations in their path. To say that they do not threaten us is the rankest folly. There can be no compromise between the philosophy that recognizes the dignity and the rights of the individual and the philosophy that glorifies the state. There can be no peace between the two great forces moving in the world today. One will be destroyed.

Medicine and its handmaiden, science, are the flower of a free civilization. Only in an atmosphere of liberty, where men may choose their own way of life, where they can without hindrance exchange ideas and in peace pursue the never ending search for truth, only in such an atmosphere can science and medicine thrive. Over the portals of one of the great medical schools of this country are inscribed these words: "Know the truth and the truth shall

set you free". But how may one know the truth unless the ideals of a free people triumph over the dark forces of barbarism, tyranny, and oppression that threaten the world today? Medicine through the years has dedicated itself to humanity. Through

its organizations it has sought to promote the public welfare. Its great and urgent task today is to help to preserve a Christian civilization without which medicine itself will perish.

339 Boush Street.

PUBLIC HEALTH PROBLEMS IN A DEFENSE AREA AND SUGGESTIONS FOR CORRECTION*

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Before entering into the general discussion of the topic I would like to give you a brief history of Montgomery County in order that it may be more understandable why some of the problems took the form they did. It is most probable that had this defense project been started in some other community, such as a large city or more urbanized community, many of the resultant problems would not have occurred, or at least their emphasis perhaps would have been different.

Montgomery County was created by an act of General Assembly in 1776 from the vast territory west of the Blue Ridge and Alleghany Mountains, then known as Fincastle County. There had been earlier expeditions and explorations, but in 1748 Col. James Patton, Dr. Thomas Walker and others explored and surveyed most of the land now known as Montgomery County.

In 1748 the first settlement, Draper's Meadows, was formed and located in this almost totally unknown wilderness on the future site of the town of Blacksburg. This and many of the other early settlements were initiated chiefly by Scotch-Irish Presbyterians. At the time Draper's Meadows was established, Virginia extended from the Atlantic Ocean to the Mississippi River, including a territory which now is composed of eight states, and boasted a population of 82,000, all but a few hundred of whom were located east of the Blue Ridge Mountains.

At first, Montgomery County embraced about 12,000 square miles and extended west to the Ohio River. This territory was soon broken up into twenty-six counties, so that today the original county has shrunk to only 389 square miles. On July 1,

1940, there were three incorporated towns of less than 3,000 population (Christiansburg 2,500; Blacksburg 1,000; Cambria 810;) one city, Radford, with a population of about 7,000; fourteen unincorporated towns of 250 or less population; and about three very small villages in the county. Between 1790 and 1800 there was a total population of 13,228 which dwindled to 7,405 during the decade 1840-1850. From 1850-1940 there has been an average annual increase of about 1,500 persons, bringing the total population as of July, 1940, to about 21,000, housed in about 4,500 dwellings.

About 90 per cent of the population in July, 1940, was white and 10 per cent colored. Of the white population all but somewhat less than 1 per cent were natives of the county, accounting for the often heard statement that "our county is 100 per cent American".

It can readily be seen that at no time during the almost two centuries of existence of this community was there ever any great population change or influx of persons foreign to the county. Its growth has been slow and natural. There never has been, as far as it can be ascertained, any excess of living facilities or space. The community as a whole has developed slowly and conservatively, only keeping pace with the population increase.

With the exception of the three towns and one city the county is entirely rural. Even this one city is a curious mixture of rural and urban life, for the city embraces fifteen square miles of land, and includes within its limits several good sized farms, as well as several sections where cows and hogs are kept. It was only quite recently that the city adopted an ordinance prohibiting cows from being allowed on the streets. Of interest is the fact that this city is the third largest in area in the State of Virginia.

*Part of a paper read by Dr. I. C. Riffin, Commissioner of Health, State of Virginia, in the absence of the author, at the Southwest Virginia Public Health Conference, Abingdon, Virginia, May 17, 1941.

The water supply of all the incorporated areas receives some form of treatment, the margin between supply and demand being not large. Milk for the most part is unpasteurized, the supply adequate and under the supervision of the State Agricultural Department. Radford City, Blacksburg and Christiansburg have sewerage disposal systems. The sewage from the two towns receives treatment while that of the city is discharged raw into the New River. In the city there are also many cesspools and some privies still in use. Cambria has individual sewerage systems, chiefly septic tanks. The remainder of the county is served by privies.

With this background in mind it is little to be wondered at that the location of the Hercules Powder Plant in Montgomery County on the New River, within a few miles of Radford City, attracting thousands of workmen and their families, found the community totally unprepared. Within the short space of a few months about 23,000 individuals were employed at the plant site, coming from every state in the union. There is no way of determining how many persons actually were here at any one time, for the numbers who brought families and the immigrant unsuccessful job seekers are unknown. Many workers found accommodations in other counties and some commuted considerable distances. Nevertheless, an industrial emergency was at hand.

The public health problems arising from this situation can be grouped into three general categories: sanitation, communicable disease control, and administration.

The chief problems have arisen in the field of sanitation. Large numbers of persons assembled in buildings, inadequate for the purpose. This resulted in considerable overcrowding and offered exceptional opportunities for exposure to disease. Beds were frequently used in three eight-hour shifts. As many as fifteen persons were found living in space only suitable for three. Good personal hygiene and environmental cleanliness was practically impossible. Other groups of persons, unable to find any accommodations, camped in trailers and put up crude shacks in rural areas at sites totally unsuited for such purposes. Most of these people had no means for sanitary disposal of sewage and garbage and obtained drinking water from the nearest unprotected spring. Due to the increased load many individual sewerage disposal systems broke down.

At the plant site during the first phases of con-

struction there was no safe or adequate water supply and no means of sanitary sewage disposal. For a while all water for several thousand men was obtained from a poorly located, open spring of small volume, housed in a building in which chickens roosted. The water was carried in open buckets to various sections of the 4,000-acre plant site and dispensed by means of a common dipper. Hastily and poorly constructed pit privies were neither adequate nor sanitary. To add to the health hazards an unscreened restaurant and mess hall was soon in operation.

Many new eating establishments appeared in the incorporated areas and had to be brought under control. Those already under control suffered a let-down in general cleanliness because they were swamped with an unusual amount of business and were unable to obtain or retain an adequate working force. Constant supervision of food handlers was made necessary and difficult because of the rapid turn-over of such workers in all the restaurants. Because of the increased number of transients on the roads of the county the problem of county-wide eating establishment control arose.

At this time the local and state health departments had no control over the milk supply. Supervision here, as in many other sections of the state, is directed by the State Agricultural Department, whose milk inspectors only number about eight for the entire state. Most of the milk consumed in the towns is graded raw milk, and in the county at large ungraded raw milk.

It is thought the next problem bearing consideration is that of industrial conditions, not only in the defense industry, but in all industries throughout the defense area.

Due to the overcrowding and general insanitary conditions communicable disease control assumed major proportions as a problem. In several instances known open cases of tuberculosis were forced to live in close contact with other persons because of lack of space for isolation. Influenza swept through the plant workers, as it did through the rest of the country, and soon spread to the contiguous community. Isolation was impossible in most instances, although an emergency hospital was set up at the plant. Commuters helped spread the disease for miles around and constantly brought in fresh infection from other areas. Measles and mumps next attacked the workers and population.

A study of reported venereal disease cases since the construction of the plant compared to a similar period of one year ago revealed there was no appreciable increase in early syphilis and a decrease in gonorrhea, this, despite the obvious infiltration of prostitutes into the area, and the knowledge that certain public conveyors would supply liquor and a prostitute for a nominal fee.

The question of immunizing all plant workers against smallpox and typhoid fever and the trial of some form of prophylaxis against influenza was raised. Some 3,000 workers finally received typhoid vaccination and about 1,000 smallpox vaccination on a voluntary basis. At first quinine was used as a prophylactic against influenza, but because of ineffective control measures used in the study, the results are inconclusive. The newly developed influenza vaccine was tried later, but no information as to its effectiveness is yet available and furthermore the epidemic was on the decline when it was administered.

One of the first administrative problems to arise was the decision whether the local health department, as formerly, had health jurisdiction over the plant area, the Federal Government, which owns the land, or the Army, under whose supervision the work is going forward. After making a sanitary survey at the plant site, the problem again arose as to which group had the authority to enforce the health department's recommendations: the construction company, the Hercules Powder Company, or the Army officials. Fortunately, these problems never proved to be more than slightly confusing, for all the authorities at the plant were always most cooperative.

Another early administrative problem was the necessity of making a sanitary survey of the entire county, including the towns and city, and referring the ensuing recommendations to the proper governing bodies. In turn, this caused the twin problem of how to obtain quick action, if any action at all, by these conservative groups. The measures thought most urgent to take included local and state health department supervision in the production and handling of milk sold in the incorporated areas; control of food and eating establishments throughout the county; the formation of planning and zoning committees for the towns and county to prevent future sanitary nuisances, such as unsupervised temporary camps, and improper garbage disposal and the keeping of cows and hogs within the urbanized

sections of the city; and the betterment of certain housing conditions.

In order that these measures could be put into effect, certain ordinances had to be drawn up and passed upon by the governing bodies. To date only the city has taken action on most of the recommendations, and the county and one town approved a food and eating establishment ordinance.

There still remains one town, close to the plant area, which has not taken any action upon any of the recommendations. This brings up two more administrative problems; what sort of pressure should be brought to bear on the authorities of this town, and, should it be exerted by the local and state health department. The reason this latter question is raised is that if at any time this town decided to dispense with the services of the local health department it could easily do so by refusing necessary appropriations, for local health departments are only barely tolerated in some sections, and are quickly dispensed with upon small pretext. The work of the department might then be in jeopardy in the remainder of the community. Repercussions of this fact are noticed in the attitude of governing bodies toward recommendations offered by the local health department. A health department is not recognized in the same light as other civic bureaus such as police and fire departments, etc. There is no state law providing for the set-up and maintenance of health departments and the governing bodies and public apparently react accordingly.

From the very inception of this industrial emergency the necessity of determining the incidence of reportable disease in the community at large and among the workers at the powder plant was recognized. A workable plan, for example, had to be organized so that plant workers with clinical and serological evidence of venereal disease would receive adequate treatment. Better reporting of notifiable disease by the practicing physicians in the area had to be encouraged. These measures were necessary to insure effective protection of both the defense project workers and the remainder of the population.

Along with these administrative problems came the realization that in case of an epidemic or a major disaster, hospitalization would become an acute problem, and be thrust principally upon the local health officer. In consequence, appropriate plans had to be drawn up to combat successfully such potential emergencies.

Not to be forgotten are the closely related problems of the public's health: public welfare and the medical care of the indigent and medically indigent. Because of the paucity of living space and the increased demand, rentals doubled and trebled. Families on a marginal subsistence were forced to move, where, they knew not to. Many were simply evicted with all their belongings to make room for the better able to pay "bullet factory workers". Many pitiful tales could be told, such as about the evicted family who had to live in a chicken coop in order to have a roof over their heads, and this accommodation allowable only for a short while, for it too was in demand as a rent. Because of the increase in jobs, wages, and population to be serviced, medical services soon were offered at a premium. This problem was particularly noticeable because there is no fund available for the medical care of the indigent in the public welfare budget.

In reviewing these problems it will be noticed that they resolve themselves into two broad groups: one, and these are probably in the majority, old, sub-surface conditions which have merely been brought to light and accentuated, and the other, new problems, in part caused by the accentuation of those old problems.

Some of the following suggestions for the correction of existing and prevention of future public health and related problems in a defense area may sound bold, coming as they do from one not old in public health experience, especially in the State of Virginia. They are offered to you merely for what they are worth and with a spirit of deference:

1. When a defense project is planned for a community the state and local health departments should be advised as far in advance as possible, so that necessary surveys and plans of action can be formulated, thereby obviating as far as possible preventable emergencies.

2. A complete sanitary survey of the entire defense area should be made by the local and state health departments, setting up and maintaining up-to-date records of all data of sanitary importance.

3. Plans should be made for the abatement of nuisances, and followed through to completion as rapidly as possible.

4. When a local health officer has accomplished as much as he can and the condition is thought important to correct, some form of pressure should be brought to bear upon the responsible authorities,

coming preferably from the state health department, and even the Federal Government, other efforts failing.

5. County health departments should be placed on as permanent a basis as the court of law, especially in defense areas. This action would give much more weight to the local health officers' recommendations, and serve as a driving wedge for placing permanent health jurisdictions throughout the state.

6. Of prime importance is the immediate establishment of cooperation between the defense project health authorities and the local health officer. This cooperation should not be merely of words, turned out in polite phraseology, but rather be of the spirit, so that the best plan of action can be adopted which will effectively protect both the defense project workers and the surrounding population.

7. Complete reporting of notifiable disease, both by the practicing and the defense project physicians, should be insisted upon. An appeal to this effect direct from the state health department to all physicians in the defense area would seem to be timely.

8. Where there is more than one health jurisdiction in a defense area, it would be advisable for those health officers to collaborate in order to expedite public health matters. Perhaps some plan for regional administration of this entire defense area might be indicated.

9. There is a definite need of a workable plan for the medical care of the indigent and medically indigent. It would seem a fund for this purpose could be set aside in the public welfare budget to include more than merely medical emergencies as it now does.

10. A survey of industrial conditions, not only in the defense industry, but in all industries in the defense area is advisable.

In conclusion let me say that whatever is accomplished now is not only important for alleviating the present situation, but for the permanent improvement of the health of the people in this area.

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THE SURGICAL CORRECTION OF NEUROFIBROMATOSIS (PLEXIFORM NEUROMATA) ABOUT THE ORBIT*

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Much has been written recently about neurofibromatosis from a pathological and histological standpoint. This has included not only the microscopic pathology, but also the many various allied accompanying defects and findings. The clinical correction of these cases, however, has been neglected in the literature to an astonishing degree. It is rather likely that one reason for this is because the various anatomical defects which appear are so numerous, so pleomorphic, and so individual in each case that it would demand quite a series of cases before any surgical procedures could be outlined, sufficiently embracing to be worth considering the condition as an established surgical entity.

This presentation, to be true, is based upon a small number of cases of neurofibromatosis about the orbit, but they are sufficiently unlike that the eleven individuals presented show many conditions not common to more than two or three of the group. Some of the cases have been carried to completion, others have some work still to be done, one case refused surgery, and one child is still too young for any extensive treatment. The ages are, therefore, from six months to thirty years of age. The period, however, at which the defect appears, is always in the very early years of life. The infant of six months is the youngest case the author has seen.

These peripheral nerve tumors, though properly grouped together with glial neuromata (the ectoderm tumors of Schwann's sheath), von Recklinghausen's disease, the neurofibromata of the cranial nerves, and neuronomata, are more commonly spoken of as plexiform neuromata. They have many characteristics which are common to this general group, but of themselves are definitely individual. Their surgical dissection demonstrates without any doubt Wilson's statement that they result from lawless or untrammelled neurofibromatous proliferation of the terminals of the entire distal fan of a nerve. Penfield feels that many of these conditions have, etiologically, a double aspect; one, a background of congenital anomalies (the neurofibrosis tissue), and on this is superimposed, too, neoplastic areas not to be

distinguished from perineural fibroblastomata (this of mesodermal origin). The statement emphasizes the necessity for very thorough removal when operating. Even though these masses of themselves are not essentially neoplastic, in terms of malignancy, still following incomplete removal, and perhaps as a result of the surgical trauma, sarcomatous transformation has occurred. Properly regarded as benign (Wilson) in the sense of pursuing leisurely development, still many men, as Thompson, Cestan, Burger, Gray, and others, have seen this sarcomatous change occur. The sarcomatous areas may appear in patches, or the growth becomes uniformly altered to this type of malignancy. In addition, as seen by Franchet and Labbé, a general state of sarcomatosis may develop, as though some congenital predisposition to tumor growth of different sorts and of different tissues lay behind the neurofibromatous disease.

The tumor tissue grows very slowly, but steadily. Inadequate and incomplete removal demonstrates this in a rather distressing manner. The anatomical defects which have appeared and which need correction are as follows: (1) the tumor tissue itself; and (2) a brawny pigmentation of the skin, doughy in consistency, inelastic, infiltrated, with redundant skin about the tumor tissue, even to the formation of hanging flaps, these frequently covered with long, dark, curly hairs. The skin in this condition will stand no tension whatsoever, bleeds copiously, and sutures, when placed with the least bit of tension, tear out very readily. It is almost as if one were suturing liver tissue. The distant café-au-lait spots so characteristic of this condition, showing themselves on the back, on the chest, and on the lower extremities, usually need no surgical removal. (3) Bone defects are seen as atrophy of the upper outer angle of the orbit, the lower outer angle of the orbit, and the floor of the orbit. One case was found with an encapsulated sequestrum of the outer wall of the orbit. Loss of, or defects of the zygomatic arch are quite common; spreading of the orbital suture lines is not at all uncommon, and one case was seen with a defect in the frontal bone. (4) Invasion of the orbit itself by tumor tissue is frequent. (5) Ptosis is a

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most common finding, due not only to the weight of the upper lid, with the included tumor tissue, but also to a rather interesting destruction of the levator palpebrae superioris or even with a posterior displacement of the levator. This is quite unusual, but in two instances, the levator was found and reattached. The orbicularis palpebrum is affected similarly, that is, by deformation and by atrophy. These conditions of the upper and the lower lid also have minimal degrees of entropion, and of conjunctival deficiency. (6) Accompanying defects of the globe itself, as micro-ophthalmia, and (7) ocular motor disturbances, especially of the external rectus are found. (8) One case of retrobulbar aneurysm was seen.



Fig. 1.—Case at time of first examination. Patient has complete absence of superior fornix, symblepharon of lid margin, neurofibromatous mass over the orbit.

In the handling of these cases, there is one thing which is certain, that is, roentgen-ray therapy is of no value whatsoever in the treatment of the condition. In one instance, however, it was of great benefit in cleaning up a chronic longstanding dermatitis with marginal blepharitis residual after the major plastic correction had been completed, and it is valuable for depilation.

The surgery usually must be done under general anesthesia, because in most instances, the soft tissue defects are so marked that infiltration anesthesia would be inadequate. The actual dissection of the tumor tissue, which is easily recognized, as white,

worm-like masses, must be very carefully done—not only to save tissues not involved, but also to remove all of the neoplasm, to prevent unnecessary scarring,



Fig. 2.—Same patient several years later after median tarsorrhaphy.

and at the same time, to conserve as much as is possible of skin, muscle tissue, tarsal plates (if they are still present), and the hair lines. Tumor tissue



Fig. 3.—A forehead defect. Margins of this outlined in black lines.

which extends into the orbit should be removed as meticulously as that lying in the lids. It will be of great assistance in these cases if careful sketches are made preoperatively, and a definite plan worked out for the subsequent correction.

In presenting the following cases, the surgical techniques used are simply mentioned, as a rule, and not described in detail. Possibilities for correction are at the moment, more important than the means used for achieving this.

CASE 1. Wills Hospital. Male infant, six months



Fig. 4.—Condition upon admission. The micro-ophthalmic eye is just apparent.

of age. Unilateral exophthalmos on right with lagophthalmos, symblepharon of the upper lid, with a complete loss of the superior fornix. Large doughy lesion above on the right forehead, immediately above the rim of the orbit, and accompanying it is an underlying bone defect of the frontal plate. When the infant is held up, by his feet, head downward, the whole mass increases slightly in size, and barely pulsates. Figure 1 shows the case, Figure 2 is the present condition, and Figure 3 is the defect as seen by roentgen-ray. An exploratory operation was done for diagnosis, and a median tarsorrhaphy performed to prevent exposure keratitis. No further surgery will be done in this case for several years. The correction necessary is the reopening of the lids, mucous membrane correction for the symblepharon, removal of the tumor, and a bone graft correction of the fault in the frontal bone. One must consider here the very likely possibility of this case being one of intracranial neurofibromatosis with extension through the frontal bone. This point was raised by the neurosurgeon in a recent examination of the case, but naturally it cannot be decided before head surgery has been carried out. Recent air studies failed in deciding anything definite.

CASE 2. Young man, age 24, admitted to the Graduate Hospital by the late Dr. Thomas B. Holloway, for consultation and for the advisability of roentgen-ray therapy. Surgery was declined. Ptosis of the upper lid on the right, neurofibromatous infiltration of the forehead and of the right temporal region, slight unilateral exophthalmos, slight widening of the inferior osseous angle of the orbit. Massive roentgen-ray was attempted, but, as expected, was valueless.

CASE 3. Boy, age 16, as illustrated in Figure 4,

admitted to the Orthopedic Hospital, with a very extensive generalized eczema, supposedly of neurogenic origin, with micro-ophthalmia, neurofibromatous infiltration of the skin over the forehead, and with ptosis. Surgery was the removal of the tumor tissue under the skin, and with it, a simple enucleation of the microthalmic eye. This case illustrated

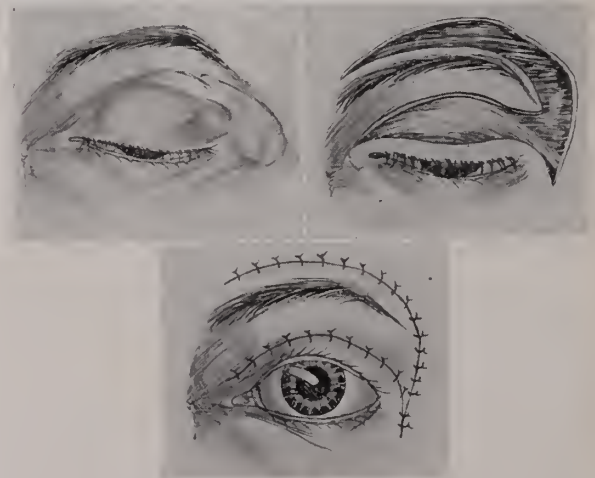


Fig. 5.—Sketches to illustrate tumor resection with conservation of orbicularis fibers, and without disturbing the position of the eyebrow.

one important thing seen in the illustration. In removing the tissue with the overlying skin, it is important not to disturb the position of the eyebrow. This prevents a later unfortunate dissimilarity in the two sides, and it serves as an important landmark. Figure 5 illustrates this. The patient's second operation was a typical Everbusch incision, with

of the tumor resection. The lid closure was quite uneventful following recovery from this operation. When she opened her lids, however, a very unpleasant notching occurred, for there was no support to the lid margin, as a result of the tarsectomy. A piece of ear cartilage, slightly larger than the normal tarsal plate, was removed from the pinna of the left



Fig. 6.—(a) Condition prior to the tumor removal. (b) Immediately after the removal. (c) Two years later, after the reattachment of the levator. (d) Following ear cartilage implant.

tarsectomy, and, thereby, the correction of the ptosis.

CASE 4. Wills Hospital. Age 6, when first seen. A rather similar defect with ptosis and with paresis of the external rectus on the left. Several weeks following the removal of the tumor mass through an orbital exploration, it was possible by an Everbusch incision to dissect out the levator and to reattach it to the margin of the lid. The patient had no tarsal plate, for this was necessarily removed at the time

ear, and this buried into the upper lid. Figure 6 A is the patient before the tumor's removal and Figure 6 B, after this was done. Figures 6 C and D illustrate the case eighteen months after the ptosis operation, and immediately following the ear cartilage implant. They cover a period of about two years.

CASE 5. Graduate Hospital. Girl, 18 years of age. Figure 7 is prior to any surgery. Ptosis of the upper lid on the left, infiltration of the lower



Fig. 7.—Front and side view of condition prior to any surgery. There is ptosis of the upper lid, slight exophthalmos, tendency to widening of the inferior outer angle of the orbit, and almost complete loss of the zygoma.

lid; slight exophthalmos; widening of the outer angle of the orbit; loss of the zygoma. Her initial surgery was done in another city. At the time when she was first referred, Figure 8, she had: enophthalmos, following the removal of the orbital extension; lagophthalmos at the inner canthal angle and ptosis at the outer canthal angle; paresis of the external rectus; and a defect of her zygoma. The

covics ptosis operation was done for the reattachment of the levator (especially the outer two-thirds) to the upper palpebral margin. This was followed by a Reese type of external angle canthoplasty, because the palpebral fissure now was considerably wider than that upon the opposite side. Figures 9 A and 9 B show the case at the time of her discharge; the closure of the lids is now adequate.



Fig. 8.—(a) Same case as Figure 7 when first seen by the author. (b) Following resection of the adherent scar in the septum orbitale. Upper lid still in ptosis. Closure, however, of palpebral fissure now possible.

muscle defect was improved decidedly by recession of the internal rectus. Resection of the adherent scar in the septum orbitale permitted a fuller closure of the lids, even though the upper lid was still in ptosis. Figure 8 A. Prior to this operation, only the outer half of the lid margin could be closed sufficiently to meet the lower lid. The inner half, however, remained notched, adherent, and elevated. A Blas-

CASE 6. Wills Hospital. Boy, 10 years of age. Figure 10 A. Unilateral exophthalmos on the right; marked infiltration of the upper and lower lid by tumor tissue; ptosis; paresis of the superior rectus; marked enlargement of the orbit; marked defect of the zygoma; almost complete loss of the superior fornix. Following the removal of the tumor mass about the lids and from the orbit, a rather thick

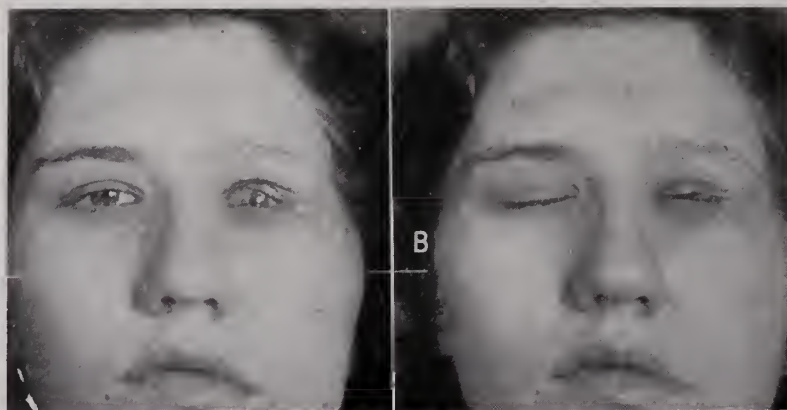


Fig. 9.—(a) Patient at time of discharge from hospital, following external angle canthoplasty, and the reattachment of the levator. (b) Attention is called to the bulging of the soft tissue over the malar, a defect due to the almost complete absence of the arch of the zygoma.

scale of rib-cartilage was placed under the periorbital in the floor of the orbit to elevate the eye to the level of the left. The cicatrix which followed this surgery was quite marked. Figure 10 A. Further surgery was done to resect as much of the resulting scar as was possible. The upper lid, however, remained thick, and almost immobile in ptosis. Fig-

ure 10 B. Finally, a fascia lata sling operation was done for the ptosis, and Figure 10 C shows the case



Fig. 10.—(a) Case when first seen. Unilateral exophthalmos, marked infiltration of both upper and lower lids, enlargement of the orbit, defect of the zygoma, loss of superior fornix. (b) Condition following the removal of the tumor mass about the lids. (c) The same patient following the cartilage implant into the floor of the orbit, and the resection of some of the scar tissue from the upper lid. Upper lid thick, immobile and in complete ptosis.

ure 10 C. An attempted Hess ptosis operation was followed with poor results, as seen in Figure 11 A. Some further improvement resulted in lid motility and in the reconstruction of the cul-de-sac after the introduction of three black silk mattress sutures from the superior cul-de-sac, emerging on the skin of the upper lid just below the level of the eyeball. There, they were tied through pearl buttons and

as it was at the time of his discharge from the hospital.

CASE 7. Graduate Hospital. Boy, 12 years of age. Marked infiltration of the upper and the lower lid with ptosis; paralysis of the left superior rectus muscle, slight exophthalmos; marked enlargement of the orbit; ptosis of the eyeball; partial loss of the zygoma; widening of all the orbital suture lines.



Fig. 11.—(a) Following the Hess operation. (b) After the implant of black silk sutures through the upper lid for the correction of the ptosis. (c) After correction of ptosis with a fascia lata sling.



Fig. 12.—(a) Unilateral exophthalmos, marked enlargement of the orbit with ptosis of the eyeball, partial loss of the zygoma. (b) Lid lifted to illustrate the tremendous enlargement of the orbit; the orbital defect being largely in the floor and outer angle of the orbit.

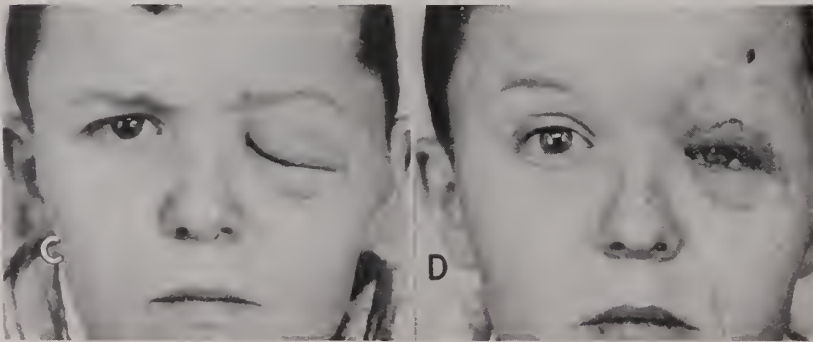


Fig. 13.—(c) The case of Figure 12 following resection of tumor mass, and after repair of the orbit with a cartilage graft. (d) At the time of his discharge from the hospital immediately after the removal of the sutures from the Hunt-Tansley ptosis operation.



Fig. 14.—(a) Marked exophthalmos. This is especially well seen in (b). Great pigmentation of the skin with much growth of hair. (b) Same patient. Upper lid raised to show the exophthalmos better, and the neoplasm infiltration of the superior fornix.

Figure 12 A. The surgery which was done in this case probably illustrates that which is necessary in a very large percentage of instances, that is—first, removal of the tumor mass from the skin of the lids,

and about the orbit, from the temporal fossa, and from the orbit itself; and secondly, the necessity for a rather thick rib-cartilage graft to be placed under the orbital periosteum for the correction of the sub-



Fig. 15.—(a and b). Roentgenograms of the right and left sides to illustrate the sequestrum line in the lateral wall of the right orbit. The left side is normal throughout. The sequestrum on right was not only encapsulated, but also, upon removal, was of a white, ivory hard density.

sequent enophthalmos and downward displacement of the eyeball; and thirdly,—some correction, as a Hunt-Tansley operation (in this instance) for the ptosis. This patient must have further ptosis surgery, however, after an interval of two or three more years. Figures 12 A and B, and C and D illustrate

the case after these surgical procedures just described were carried out.

CASE 8. Wills Hospital. A child, 8 years of age, with marked exophthalmos; marked infiltration of the skin, with a great amount of pigmentation, accompanied by much new growth of hair in the skin



Fig. 16.—(a) Immediately after the neoplasm removal, and following the external orbitotomy for the removal of the sequestrum. (b) The case when last seen. There is no longer any pulsation from a retrobulbar aneurysm. There is still a bit of residual ptosis, which will need some later correction.



Fig. 17.—(a) Front and side view showing tumor infiltration of the skin, the ptosis, and (b) the unusual growth of hair overlying the region of the zygoma.

over the tumor; marked defect of the zygoma; an encapsulated sequestrum in the outer wall of the orbit; and a pulsating retrobulbar aneurysm. During the removal of the tumor tissue, an orbital wall resection was necessary to permit the removal of the sequestrum, and of that extension of the neoplasm which lay in the orbit. Also, it was thought necessary to determine, if possible, something more definite relative to the pulsating retrobulbar aneurysm. At this surgery the aneurysm was seen to enter the orbit through the inferior orbital fissure. In the re-

moval of the skin tissue with the underlying tumor tissue, it was necessary to undermine the skin of the face down to the angle of the jaw, to carry the incision in front of the pinna, and to undermine well into the forehead, so that satisfactory closure could be obtained. With such extensive dissection one had to be careful to prevent damage to the facial nerve supply to the muscles supplied by the 7th nerve. There is some slight ptosis residual, following this surgery, but it is not to be reoperated for another year. Following the soft tissue and bone surgery,



Fig. 18.—(a) Patient shortly after the removal of the neoplasm, and prior to depilation by x-ray therapy. (b) Case completed except for the ptosis surgery.



Fig. 19.—Case at completion following Hunt-Tansley ptosis operation. Additional improvement could be obtained with a cartilage graft for elevation of the depressed eyeball. Vision, however, of right eye is only 1/150.

the patient was referred to a roentgenologist in her home town, and she has been given massive roentgen-ray therapy for the aneurysm. This treatment has resulted in complete cessation of all pulsation, and, at the same time, further recession of the exophthal-

mos. The case will be completed by a finger pedicle flap from the skin of the upper lid into the lower lid margin, and the lower lid, thereby correcting the slight residual ptosis and simultaneously correcting the ectropion at the outer angle of the lower lid. It should improve, decidedly, at the same time, the appearance of the external canthal angle. Figures 14 A and 14 B show the case upon admission, Figures 15 A and B are the roentgen-ray photographs of the right diseased side showing the sequestrum, and of the left normal side, they also show the zygomatic defect, the orbital deformity, and the orbital bone erosion from the pulsating aneurysm. Figures 16 A and B illustrate the case subsequently, at the present time.

CASE 9. Graduate Hospital. Child, age 9 years, with marked infiltration of the skin, marked ptosis, extensive atrophy of the floor of the orbit, and a most unusual growth of hair over the tumor mass, down almost to the level of the angle of the mouth. Figure 17 A is the front view of this, and Figure 17 B, the side view, the latter showing not only the tumor mass but also the growth of hair present. Figure 18 A illustrates the case after the tumor resection, side view, prior to roentgen-ray depilation, and Figure 18 B, the front view some time later after sufficient roentgen-ray therapy had been used to obtain complete depilation over the former tumor site. The brown pigmentation present was decreased simultaneously to some degree. Figure 19 is the



Fig. 20.—(a) Case upon admission. Neurofibromatosis of the upper lid and into the temporal fossa. Arch of the zygoma wholly absent. Brawny infiltration of skin rather prominent. Nodular excrescences of neurofibromatous tissue extending down over the malar process even into the skin over the chin. (b) Same case immediately after removal of the tumor mass in the upper lid.

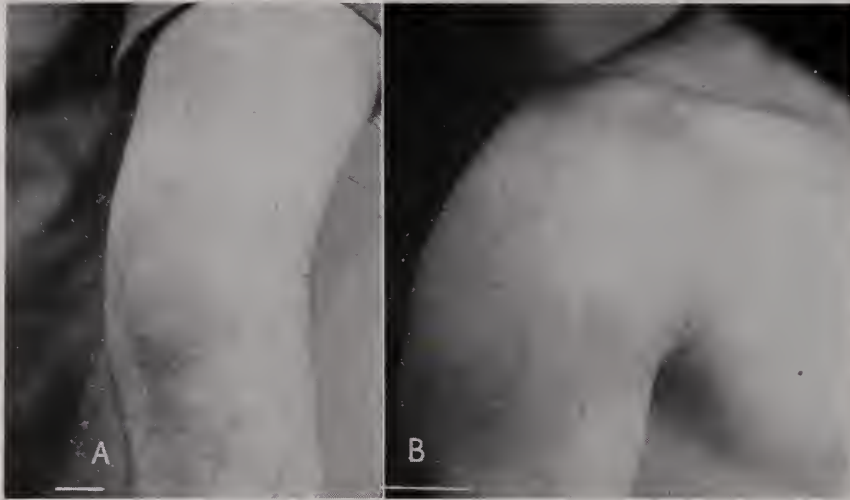


Fig. 21.—(a and b). Café-au-lait spots on the left knee and the right upper arm of this patient.

case following a Hunt-Tansley operation. This child, for cosmetic reasons only, should have a cartilage graft to elevate the depressed right eyeball; vision, however, is only 1/150.

CASE 10. Graduate Hospital. Young man, age 20, with marked neurofibromatosis of the upper and the lower lid with redundancy of the tissue there, so that a fleshy mass overlay the area of the zygoma. The zygoma was wholly absent. Figure 20 A. The extent of the brawny infiltration of the skin was very marked. He had many café-au-lait spots

throughout his body; two of these are illustrated in Figure 21. The surgical removal of the neoplasm on the face was followed by such a large defect, that it was necessary to swing skin up over the angle of the jaw, and then to cover that secondary defect by a sliding flap from the neck. Figure 22 is the side view of the case after this operation, and Figure 23 A illustrates this flap schematically. Figure 23 B shows the flap with the suture lines artificially accentuated. This case, following his surgery, had a persistent recurrent folliculosis along the incision lines, with a marginal blepharitis, which remained resistant to all treatment until roentgen-ray therapy was used. Figures 24 A and 24 B show the case at the time of discharge.



Fig. 22.—Side view of the patient following the removal of the neoplasm on the face and healing after the pedicle flap.

CASE 11. A woman, age 30 years. Graduate Hospital. Her defect was similar to that seen in Case 10, except to an even more marked degree. There was a large brown hairy flap overlying the entire right side of the face (pachydermatocele also called elephantiasis neuromatosa). She had a marked micro-ophthalmia, with unusually large conjunctival cul-de-sacs. The entire zygoma was missing. Her surgery consisted of an enucleation of the micro-ophthalmic eye, the removal of the soft tissue defect, utilizing a similar plastic procedure as in Case 10, and subsequently removal of small areas of scar tissue contraction with resuture, and finally, a Hess ptosis operation. Figure 25 illustrates this case prior to surgery; Figure 26 A, immediately after the tumor removal; Figure 26 B, after further lid sur-



Fig. 23.—(a) Schematic drawing to illustrate the flap used. (b) Same case with suture lines accentuated

gery and the enucleation; notice the defect of the zygoma; Figures 27 A and 27 B before and after the roentgen-ray depilation of the tissue over the zygomatic fossa; Figure 27 C is the end result; patient is now fitted with a satisfactory prosthesis. Her last operation was the utilization of fascia as a sling for the correction of some residual ptosis.

CONCLUSIONS

A series of eleven cases of neurofibromatosis about the orbit has been presented to illustrate the sur-

gical procedures necessary for correction. It is evident that the results in several of these instances are still far from perfection. It is equally certain, however, that they all have been greatly improved. The accompanying ptosis is probably the most difficult of the deformities to correct. In the removal of the neoplasm, one must be quite meticulous in the dissection to remove all the tumor tissue that can be found. The tumor mass infiltrates without a capsule and the dissection necessary for complete removal is often extensive and rather far reaching. Thus, the skin when itself involved, must be removed—this to be replaced by a pedicle or a sliding flap. Orbital extension needs equally careful removal. These cases are not easy of correction to maximum benefits, and demand, in each instance, several different operations. Because of the wide resection of the involved skin, as necessary, sliding flaps should be used to close the defect. Cartilage grafts are frequently necessary as well. Incomplete removal results in further growth and seems, according to some men, to predispose to sarcomatous conversion. X-ray and radium therapy, as now used are both valueless. It seems that best results were obtained in those cases in whom the various surgical procedures were done with a fair interval of time intervening between each operation. From two to four years are usually necessary to obtain the best results in any given case.



Fig. 24.—(a and b). Show the case at time of discharge from the hospital. Satisfactory closure. The residual ptosis was corrected with an Everbusch procedure.



Fig. 25.—(a and b). Front and side view of patient upon admission prior to any surgery. The huge pachydermatocoele is very evident. The loss of the zygoma is in part masked by this hanging flap.



Fig. 26.—(a) Immediately after the tumor removal. (b) After further lid surgery, and after the enucleation. Artificial eye now being worn. The defect from the loss of the zygoma is very evident in (b).



Fig. 27.—(a) Before roentgen-ray depilation. (b) The case following the completion of this, and before the final ptosis surgery. (c) The case completed with a fascia lata sling operation.

None of these cases presented had an intraocular extension of the tumor. It is quite possible, however, that Case I has an intracranial neurofibroma

(plexiform) which will demand an exploratory craniotomy.

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PYLEPHLEBITIS

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Pylephlebitis is probably the most serious complication of appendicitis. This condition is due to infection in the portal system extending upward to the liver with the formation of multiple abscesses within that organ. While the large majority of these infections result from appendicitis, any suppurative process within the area drained by the portal vein may give rise to pylephlebitis. Cases have been reported following infection in the stomach, duodenum, small intestine, colon, rectum, pancreas, spleen, gall-bladder, and mesenteric glands.¹

Eliason² stated that 92.8 per cent of reported cases of pylephlebitis resulted from appendicitis and it is estimated that about one-fourth of one per cent of all acute appendicitis terminates in pylephlebitis. A review³ of 8,969 cases of acute appendicitis treated at the Massachusetts General Hospital from 1900 to 1933 showed twenty-seven cases of pylephlebitis, or an incidence of three-tenths of one per cent. The mortality was 92 per cent. This figure appears very high but other series are comparable; Brutt reporting a mortality of 95 per cent, Moschowitz 85 per cent and Otschkin 80 per cent.³

Despite the distressingly high mortality and not infrequent occurrence of this condition a review of the recent literature shows relatively few articles on this subject.

The symptomatology is fairly constant and the diagnosis as a rule is not difficult, yet many cases come to autopsy unrecognized. This is due in part to the fact that pylephlebitis is secondary to another infection and the attending surgeon may ascribe all of the symptoms to the original complaint and fail to realize that a second and more lethal condition has developed.

The most constant and suggestive sign of pylephlebitis is an unexplained post-operative chill in a patient with an intra-abdominal infection. A history of a single pre-operative chill associated with acute appendicitis may mean much or little, for probably 2 or 3 per cent of all cases will give a history of having had a rigor prior to operation, whereas only 10 per cent of these patients will develop pylephlebitis. Significant, however, are the figures of Allen³ and his associates, who found that 40 per cent of

all the cases of pylephlebitis in his series gave the history of a pre-operative chill. It has been suggested that one chill at the onset of acute appendicitis is of little moment but that two chills are indicative of portal involvement.

While acute appendicitis without rupture may result in pylephlebitis the usual causative agent is a gangrenous appendix removed late in the illness. As a rule the operator is not aware of the thrombi in the appendiceal veins and gives no thought to this possibility at the time of operation (Allen).³ The chills are irregularly spaced and may be followed by quiescent periods during which the patient may be virtually afebrile. A septic temperature with marked fluctuations and drenching sweats is usually seen as the illness progresses.

Abdominal pain is inconstant early in the disease but when present it is usually localized in the right upper quadrant. The liver increases in size and is frequently tender. A pleural rub in the right base or referred pain to the shoulder is often present. If the process in the liver is widespread an X-ray of the chest will frequently show inflammatory changes in the base of the right lung with elevation and limitation of motion of the diaphragm. Eliason² considers a slight edema of the right flank and over the region of the lower ribs in the midaxillary line as almost diagnostic when the other signs point to pylephlebitis.

A mild icterus is usually present and when it appears early in the illness it may confuse the picture by suggesting gall-bladder disease. Nausea and vomiting are inconstant but anorexia is usually pronounced. Emaciation is rapid and prostration is marked. A severe anemia usually develops. The spleen becomes palpable as the disease progresses. In late cases ascites has been reported. In the majority of cases the course is progressively downward and the patient succumbs several weeks after the onset of symptoms.

The laboratory findings are not diagnostic in pylephlebitis. The leukocyte count is moderately to markedly elevated. The slight clinical jaundice is substantiated by the icteric index. Blood cultures are usually sterile and when growths are obtained it

means that the infection has progressed beyond the stage of pylephlebitis and metastatic abscesses in the liver are spilling organisms into the hepatic veins.

The treatment of pylephlebitis has been as ineffectual as the high mortality would indicate. Prophylaxis is naturally the ideal approach to this condition. An early diagnosis and immediate operation in acute appendicitis would probably obviate three-fourths of these cases. Any patient with acute appendicitis who gives a history of a chill and especially those who have had repeated chills should be considered potential cases of pylephlebitis. The mesentery of the appendix should be closely examined for thrombosed vessels and, if these are present, the ileo-colic vein should be ligated above the clot after the method of Braun.³ This should be done before the appendix is removed, otherwise the manipulation and trauma incident to ligating the meso-appendix may dislodge septic thrombi with spread of the infection. If a thrombus is present in the ileo-colic vein the vessel will be firm and enlarged to almost the diameter of a pencil. Ligation of the portal vein has been advised in this condition but little benefit could result and much harm may follow so radical a procedure.

When pylephlebitis appears following operation, the decision as to ligation of the ileo-colic vein is more difficult. Many of the patients have peritonitis of the involved area. This adds technical hazards and the trauma of operation in an infected field may do more harm than good. Each case must be decided on its own merits.

Repeated transfusions are useful in all cases. If the X-ray of the chest and the contour of the liver suggests that a single abscess has formed from coalescence of small abscesses, this should be drained by the most accessible route. The large majority of cases do not lend themselves to this procedure and an exploratory operation is futile in most cases.

The introduction of chemotherapy offers much in the treatment of pylephlebitis. Sulfonamides by mouth undoubtedly give a high concentration of the drug in the portal system and should act directly on the infection in the liver.

Ottenberg and Beck⁴ stated that they treated two patients with pylephlebitis successfully with sulfanilamide. Evarts Graham⁵ in commenting on this report in the 1939 Year Book of General Surgery observed that he also had two recoveries from this condition following the use of sulfanilamide. Chemo-

therapy, therefore, will probably be our greatest ally in treating pylephlebitis.

An illustrative case is cited.

Mr. L. T. S., Jr., a thirty-one-year-old office worker, was admitted to St. Elizabeth's Hospital on the afternoon of August 18, 1940, complaining of abdominal pain of twenty-four hours' duration. The pain which began in the center of the abdomen was accompanied by nausea and vomiting and prevented sleep during the night prior to admission. Later questioning elicited the history of one chill during the night. The pain continued cramp-like and gradually became localized in the right lower quadrant and right flank. Several hours before admission the acute pain diminished but the entire abdomen became tender. He was seen by Dr. Turner Shelton who advised hospitalization.

Physical examination on admission showed a robust, slightly overweight, young man who was obviously ill. The findings were indicative of a ruptured appendix with early peritonitis. The pre-operative temperature and pulse were not recorded on the chart.

The routine laboratory studies showed a total white cell count of only 8,400 but there were 92 per cent neutrophils in the blood smear. The hemoglobin was 88 per cent. The urinalysis was normal.

An immediate operation was done under ethylene-ether anesthesia through a McBurney incision. The appendix was exposed with difficulty for it was situated retroceally and the abdominal wall was exceedingly thick. The appendix was gangrenous and there was localized peritonitis but the general peritoneal cavity did not appear to be involved. Sulfanilamide powder was placed in the wound which was closed loosely about two cigarette drains.

After an initial temperature rise to 103°, the patient improved rather rapidly for the first four days after operation and his temperature fell to 99.2°. Intravenous dextrose in Ringer's solution and sulfanilamide in normal saline by hypodermoclysis were given for the first few days. The sulfanilamide was discontinued after three days due to headache, dizziness and nausea. Following this the temperature increased somewhat and the patient felt generally ill but there was no specific complaint until the afternoon of August 25, one week after operation, when he had a severe pain in the right lower chest which was made worse by deep inspiration. About eight hours later he had a chill and his tem-

perature rose to 102.8° . He was seen by Dr. Douglas G. Chapman who found signs of a pleurisy over the involved area. He was treated symptomatically and felt improved but his temperature continued to rise to 101° and 102° each evening. His white blood count on August 28 was 22,000 and the neutrophils were 86 per cent.

On August 29 he complained of a tightness in his chest and aching in both arms. Dr. Coleman Booker who saw him at this time said that he was "unable to find anything localizing in the patient but he just didn't look right." This description was apt for he was obviously an ill person without any specific complaint. His abdomen was tender. The liver and spleen could not be palpated. There was no clinical jaundice. That evening a second chill was had and his temperature rose to 102.6° . Neo-prontosil was started and a blood culture taken at this time was later reported as sterile. An X-ray of the chest the following day showed nothing of significance. The diaphragm was not elevated.

On the evening of August 30 a third chill occurred and this was followed by a moderate fever and later by a drenching sweat. All of these chills began, singularly enough, about six o'clock in the evening. The routine blood and urine studies were not remarkable on this date but the icteric index was 12.0 and there was a slight jaundice. Smears were negative for malaria. The abdomen was entirely normal aside from a healing appendectomy wound.

On August 31 a blood transfusion was given. Following this he felt stronger but continued to run an irregular fever. On September 5 he became nauseated and the neo-prontosil was discontinued. Later that day he had a chill but his temperature rose to only 100.8° . I was out of town and Dr. John S. Horsley, Jr., who was following the patient, suggested investigating the right urinary tract. This was done by Dr. M. P. Gordon but nothing of significance was found. A second blood culture was negative for organisms. The usual agglutination tests were also normal. Atabrine was given in the forlorn hope that malaria might be present despite repeated negative blood smears.

On September 7 two chills occurred and a second blood transfusion was given. Sulfathiazole was started and the patient became nauseated almost immediately with continued vomiting until it was discontinued. At this time the liver for the first time

could be felt two finger breadths below the costal margin and it was definitely tender on pressure. The slight jaundice noted previously and the moderate elevation of the icteric index now began to recede.

The following two weeks were a discouraging repetition of the preceding ones. The fever continued in an irregular manner with mild chills and severe sweats. Sulfathiazole was resumed and vomiting again became severe. A progressive anemia necessitated further blood transfusions. A second X-ray of the chest for changes in the right base was negative. Sulfanilamide was given by hypodermoclysis but nausea and vomiting returned and forced us to discontinue it.

On September 23 neo-prontosil with sodium bromide was given with some improvement in the nausea but it was necessary to supplement the intake with intravenous dextrose. On September 25, at the suggestion of Dr. Wm. H. Higgins, nicotinic acid was substituted for the bromides and the nausea diminished immediately. His appetite increased and while a chill occurred on September 26, his general condition was definitely improved.

No chill occurred after this date and his temperature rapidly fell to normal. The tenderness disappeared from his liver and this organ could no longer be palpated beneath the costal margin. His hemoglobin increased without transfusions during the last two weeks of his hospital stay. On October 6 he was discharged from the hospital after having been afebrile the preceding nine days.

He has been seen several times since discharge and his chief complaint now is that he has gained too much weight since he left the hospital.

SUMMARY

A case of pylephlebitis following a ruptured appendix is reported.

While the diagnosis fortunately was not verified by operation or autopsy an infection was undoubtedly present in the portal system with secondary involvement of the liver.

Pylephlebitis usually results from a gangrenous appendicitis but this complication may follow infection of any organ drained by the portal vein.

Early diagnosis and operation in acute appendicitis would probably reduce the incidence of this condition by 75 per cent.

Pylephlebitis has carried a very high mortality

in the past but recent reports in the literature and the present case indicate that the sulfonamides offer much in the treatment of this infection.

The use of nicotinic acid with neo-prontosil prevented nausea and permitted the patient to take large amounts of this drug over a considerable period of time.

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AN OUTBREAK OF BOTULISM IN ORANGE COUNTY.

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There are few emergencies more demanding than that presented by an outbreak of botulism. This disease is so rare that most medical men, even those with extensive clinical experience, have never observed a case. In the period from 1899 to 1927 there were reported in the United States and Canada, including one outbreak from England and one from Argentina, a total of 151 outbreaks, or 518 cases, with 347 deaths, a mortality rate of 67 per cent. Only fifty-five of these outbreaks were proved toxicologically and bacteriologically.¹

There are few instances in the literature of successful treatment with antitoxin. Hegler,² a German worker, describes two very serious cases in which administration five days after onset was undoubtedly life-saving and dramatically effective. Mackenzie³ describes the treatment of three cases of botulism a few hours after onset. Although it is generally believed that antitoxin, in order to be effective, should be given within a few hours after ingestion of the poisoned food, there are instances of favorable results as late as five days after onset of symptoms. Because of the infrequent occurrence of botulism, the antitoxin is difficult to obtain. In the Orange County outbreak antitoxin for the treatment of only one case was available.

Diagnosis is often difficult in the isolated case. Unlike other types of food poisoning, there may be no gastrointestinal symptoms at all. Exudate may be profuse or absent. Constipation is almost always present. Dysarthria, dysphagia, hoarseness, pupil-

lary and lid changes, absent gag reflex and pharyngeal weakness are frequently observed. Subnormal temperature, excessive thirst, dryness of the mouth or profuse exudation, hoarseness and voice changes are often early signs.

Our cases were at first mistaken for diphtheria, and it was several hours later before we were definitely certain that we were dealing with an outbreak of botulism. By this time others in the family had become ill. A summary of the case histories is given below:

CASE I—J. W.

First seen early Sunday, November 17. Physical examination revealed an acutely ill colored male, complaining of pain and difficulty in swallowing. Temperature was 101, pulse and respiration normal. Pupils were dilated and reacted sluggishly to light. There was no ptosis or photophobia. The throat and nostrils contained a thick, dirty gray exudate closely resembling a diphtheritic membrane. Heart and lungs were normal, and the abdomen was slightly distended but not painful. Bowels had not moved for two days. There was some weakness of the right leg with sluggish patellar reflexes. Because of the appearance of the throat, diphtheria was suspected, and 60,000 units of antitoxin were administered without effect. Later in the day the patient complained of inability to void, and had to be catheterized. Pulse became progressively weaker and faster, and swallowing became more difficult. The patient became restless, attempting to get out of bed and walk

around. Late in the day he became comatose, and death occurred early the following morning from cardiac failure.

CASE II—R. W.

First seen early Sunday, November 17, patient found in a comatose condition. Temperature by rectum was 103. Pulse rapid and weak. Pharynx and tonsils were covered with a grayish white membrane with much purulent material in the nose and pharynx. Gag reflex was absent. Cervical glands were enlarged. Pupils were dilated and reacted sluggishly to light. Diphtheria was suspected and 40,000 units of antitoxin were given before transferring the patient to the hospital. Death occurred on the third hospital day, having been comatose during the entire stay.

CASE III—W. W.

First seen Sunday, November 17, complaining of malaise and weakness. Later complained of difficulty in swallowing. Nose and throat clear at first, later became filled with same peculiar type of exudate. Gag reflex present at first, disappeared the next day as it became more difficult to swallow. Throat filled with exudate rendering breathing difficult during the night. Eye signs were absent at first, later became evident as ptosis, mydriasis, and diminished light reflex. The following day there were signs of consolidation in the chest and the temperature rose to 103. Pulse became weaker and more rapid. Botulism was strongly suspected, and an attempt was made to secure antitoxin. Enough to treat one case only was available and this could not be obtained until after death from cardiac failure had occurred.

CASE IV—C. W.

First became ill late Sunday, about the same time as the previous case. Complained of malaise, weakness, and difficulty in swallowing, and a dirty grayish black type of exudate with small areas of hemorrhage formed on the pharynx. No eye signs were evident at any time. Death occurred the following evening from cardiac failure.

CASE V—F. W.

Patient first noted as becoming listless and apathetic late on the afternoon of November 19. The following morning there was a definite hoarseness of her voice, and an appearance of the same type of exudate in the nose and throat. Patient complained of marked thirst and asked for water every

fifteen minutes throughout the morning. Gag reflex was absent, and there was a definite lid lag of the right eye, with mydriasis and sluggish light reflex. An attempt was made to administer 10,000 units of combined Type A and Type B Botulinus antitoxin intravenously. Approximately 5,000 units had been administered when the patient suffered a marked serum shock, with an abrupt fall in blood pressure, weak thready pulse, and the appearance of an urticarial type of eruption over the arms, face, and chest. A total of 2 cc. of intravenous adrenalin was given in the next five minutes and the pulse came back and respiration increased. By late afternoon there was a noticeable change in the patient, first evident by an increased ability to swallow, and a disappearance of her hoarseness. By evening the gag reflex had returned, and the pupil reacted better to light. The lid lag also disappeared. Throughout the day temperature remained subnormal. Recovery was complete.

Botulism was not suspected until the second day when two other members of the family had become ill. At this time several empty fruit jars were found in the woodshed and the fact that five members of the family had partaken of several ears of home-canned corn approximately three days before was brought out. It was not possible to establish definitely at what time the corn had been eaten nor how much had been consumed by each patient. The mental status of the family was of a low degree and a dependable history was difficult to obtain. Suspicions were even more thoroughly aroused when one of several cats which had been living in the house mysteriously died. A hog died also about the same time.

On Monday every jar in the house was opened and taken to the laboratory for analysis. Three jars of home-canned corn found in the house showing marked spoilage, were negative for Botulinus toxin, both by feeding experiments and by animal inoculations. Culturing also gave negative results for Clostridium Botulinum. One empty jar which was found out in the yard proved to be highly interesting. Washings from this jar contained the toxin of Botulinus Type B, and a culture of the same organism was grown from the washings.

An autopsy was performed on the eleven-year-old boy, showing cloudy swelling of the liver and kidneys and a diffuse bilateral bronchopneumonia. Similar findings were obtained on the six-year-old girl

who died in the hospital. It was regrettable that an examination of the brain could not be obtained.

One hundred and twenty grams of the boy's liver were ground and extracted with 35 c.c. of physiological saline, centrifugalized and the supernatant liquid tested for the presence of toxin by inoculating mice with doses of 1 c.c., 0.5 c.c., and 0.25 c.c. Mice protected with Type B antitoxin survived while those receiving Type A antitoxin and no antitoxin all died within forty-eight to seventy-two hours.

Liver extract filtered through a Berkfeld filter also caused death in mice, the mice showing typical symptoms.

The blood specimens were non-toxic for mice in 0.5 c.c. amounts.

In evaluating the case treated with antitoxin, it is difficult to determine how much the antitoxin had to do with recovery. A marked improvement was noted during the following twelve hours, however, and it is not unlikely that the antitoxin had some effect as evidenced by the return of her gag reflex, increased ability to swallow, disappearance of thirst and voice signs, lid lag, and exudate. It should be noted, however, that this patient was the last of the five who had eaten the corn to become ill, and that she first developed signs after a five-day period had elapsed from the time of ingestion of the poisoned food. It is believed that she did not eat as much corn as the others and therefore it is hard to tell whether, without treatment, she might have recovered. There is reason to doubt this when it is realized that death has been known to follow mere tasting of contaminated food.

Mortality rates vary from 65 to 80 per cent. Myer⁴ mentions a series of 119 cases, all of which were treated with antitoxin with a mortality rate of 20 per cent. Another series of seventy-five untreated cases had a mortality rate of 93 per cent.

PROPHYLAXIS OF BOTULISM

Since *Botulinus* toxin is most favorably produced in the absence of oxygen, it finds a fertile environ-

ment in canned foods, especially those prepared in the home by the cold pack method. Vegetables such as corn and beans are most often contaminated.

Swab and Gerald⁵ enumerate the following points in the prevention of botulism, emphasizing at the same time the difficulty involved in obtaining antitoxin:

1. People should be warned not to serve food from cans which have bulging ends.
2. Never taste food which presents a peculiar odor, or from which there is escape of gas when the can is opened.
3. To cook left-overs thoroughly before serving, instead of utilizing them for salads in the raw state.
4. That cold pack methods of preserving are altogether inadequate in preventing *Botulinus* spoilage.
5. That foods which do not tolerate long processes of cooking without disintegration should be treated at higher temperatures for shorter intervals.
6. That no method of food canning is safe except by complete sterilization.

In conclusion the writers wish to thank Dr. William Grossmann, of the Virginia State Department of Health, Drs. Sarah Stewart and A. G. Gilliam, of the National Institute of Health, for their aid in establishing a diagnosis and obtaining antitoxin.

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THE COMMON COLD*

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This presentation of a rather difficult subject, with some of its practical implications, may contain, it is hoped, at least a spark of vitality and helpfulness to the general practitioner. It is with some misgiving that I bring it to your attention in a general sort of way. Nobody seems to know very much about it. It is, nevertheless, in the mind of the laity as well as of the physician, and becomes a challenge to our professional efficiency—The Common Cold.

Try to find some one who is not interested in the common cold. Indifferent as one might be, he is forced to take a very personal interest in it from one to four or more times a year—if he is a normal individual. What man does to the common cold comprises a bit of practically negative results; what the cold does to man is a story startling and sad. The United States Public Health Service estimates conservatively that the common cold inflicts upon this country a direct economic loss of 450 million dollars annually, not accounting for the catarrhal afflictions for which it paves the way.

There are many guesses as to etiology. It was Dr. Samuel Johnson, I believe, who attributed the pernicious thing to the irritating effects of comet dust. Another famous man contended that it was got from sitting in damp churches. Quite plausible. Primary invasion of every known bacteria has been blamed; and some of the more recent researches point toward a virus which may reduce resistance to secondary organisms, thus paving the way for the acute inflammatory process which follows exposure.

Dr. William J. Kerr stated that at the University of California, "We have not been able to transmit the common cold to susceptible persons, even though they are known to have many colds during the year, so long as we keep the environment constant, and at a comfortable level." He hinted that the defect or fault was probably a constitutional one and was connected with the autonomic nervous system. These individuals were unable to respond normally to the environment and failed to respond when the cooling power of the air was suddenly increased. To all of

which Dr. Gerald Shibley¹ of Cleveland replied, "It is a fairly well known fact that explorers who have gone to the north pole for as long as two or three years, in spite of exposure to cold, to fatigue and to practically every type of elemental exposure, never get colds. The minute they hit civilization, where colds are present, back come colds again." So, who knows what causes the common cold?

The duration of the common cold, untreated, is about fifteen days; treated, it is also too often, about fifteen days, according to an old adage. Nevertheless, even for the sake of the comfort of the patient, treatment must be administered—or else, there is danger of the physician impairing either his thrifty disposition or his reputation, or both. Seriously, however, there are other reasons why conscientious professional attention should be given the common cold victim. There is reasonable hope, first, of aborting an early cold and, second, of preventing dangerous complications, such as otitis media or sinusitis.

No longer should just bed rest, two dozen soft linen handkerchiefs, and aspirin be prescribed. There are several treatments most of which have merit. Many, of course, are agreed on the value of isolation,² saturation, elimination,³ and alkalization,⁴ and a regimen of building up of the constitutional resistance.

Cold vaccine, containing five or six of the more common cold organisms, may be tried, especially in preventive medicine. During an epidemic of severe colds, a large group of students at Miami University, according to Stafford⁵ were almost completely protected by oral vaccine therapy.

Rockwell⁶ and his associates also found that oral vaccine was very effective in preventing colds. Fischbach⁷ has prepared a mixture of fifteen or sixteen different organisms for vaccination purposes in his own community and has claimed to obtain immunity in a large majority of his "cold" patients.

On the other hand, Diehl, Baker and Cowan⁸ made a comparative study of the value of two orally and subcutaneously administered vaccines among college students and concluded that there was no evidence of benefit from the oral vaccine and only

*Read before a joint meeting of the Staffs of the Bluefield Sanitarium, Stevens Clinic Hospital, and the Clinch Valley Clinic Hospital, and their guests, at Richlands, Va., August 27, 1941.

a relatively slight benefit from the subcutaneously administered vaccine. Two years later (1940), reporting further, this same group concluded that: "A carefully controlled study of the traditionally heat killed bacterial vaccine for the common cold reveals no evidence that it is of value in a group of cold-susceptible students at the University of Minnesota." In general my own experience leads me to agree with the implications of the latter conclusion.

Vitamin A (halibut oil) while apparently helping to build up resistance in both children and adults, especially in the winter months when leafy vegetables are scarce, is not anti-infective, according to experiments of Shibley and Spies.¹ Nevertheless, "Vitamin A intake, particularly, should be scrutinized, since this fat-soluble nutritional factor is necessary for the maintenance of physiologic integrity of mucous membranes, the first line of defense against respiratory tract invaders." (*Therapeutic Notes*, Feb., 1941).

For our own "cold" patients, Copavin (equal parts codeine and papaverine), as determined by Diehl⁹ through experiments on 1,000 students, is usually prescribed. In acute colds of twenty-four to seventy-two hours duration, we have found that about 75 per cent can be aborted in twenty-four to forty-eight hours. Keeping in mind that ventilation and drainage are rock-bottom principles in preventing sinus involvement, we supplement copavin therapy with nasal sprays and other vaso-constrictor drugs, such as ephedrine in oil or as the isotonic solution, or benzedrine vapor, for use both in the office and in the home. We never prescribe oily nose drops except for daylight use, when the patient may either expel the oil by blowing the nose or swallow it. To use oil in the nose of sleeping patients, whether adult or child, is to invite slow disaster in the form of lipoid pneumonia. If night therapy is absolutely necessary we prescribe either a benzedrine inhaler or an isotonic solution of ephedrine which can do little or no harm, even if aspirated. For small children the isotonic or aqueous solution of ephedrine or the benzedrine inhaler is safer at all times.

Dr. Arthur Ewens of Atlantic City, having removed the innocuous uvulas of over 2,000 patients (staphylotomy) claims to have reduced the cold susceptibility in these patients in excess of 50 per cent. In our own series of several dozen staphylotomies in preventive cold surgery, one patient claims that his

colds are more frequent and worse than ever. Perhaps this is the proverbial exception that proves the rule. My other patients, mostly children, have been non-committal.

Perhaps there is merit in this simple surgical procedure, especially when the uvula is long, boggy and irritative. Its very position favors the adverse effects of gravity, and, with its poor circulation, it may readily become the seat of an incipient cold. The dog's uvula is broad and fan-shaped, its physiological function being the reflex expulsion of foreign bodies, such as gnats and bugs, that fly into his mouth while he runs. Our ancestors doubtless ran through the wilderness with their mouths open too. Now few of us do that, or at most on rare occasions, which fact would certainly argue for the present uselessness of the innocuous uvula.

A while ago I hinted that the prompt treatment of an acute cold might not only abort the condition but prevent complicating otitis media or sinusitis. In passing, may I say a few words in reference to these frequent complications?

Too frequently a sinus infection is overlooked in children, especially in those who keep a "runny nose" for weeks after the acute cold has subsided. Fischbach claims that 65 per cent of chronic sinusitis in adults may be traced back to acute head infections in infancy and childhood. The child is born with practically fully developed antrum and sphenoid sinuses, the ethmoids and frontals usually forming in the subsequent one to three years.

You may recall having seen such children, some of whom have had their tonsils and adenoids removed, with frequently, recurring colds and lateral pharyngitis, with otitis media, acute or chronic; those whom pediatricians and general practitioners have treated for bronchial infection, and the more varied group presenting toxemia or septicemia, mental deficiencies and everything from arthritis to nephritis.

In this connection, my plea is that every general man as well as specialist learn the use of a head mirror and nasal speculum. Surgical intervention in acute sinusitis in children is rarely called for. The vast majority of them will respond to persistent medical care over a long period of time, consisting largely in building up resistance in the child and giving him adequate ventilation and drainage with vaso-constrictor drugs. Teaching the child to spit and to blow his nose properly is of the utmost im-

portance. There are adults, even, who for one reason or another have never learned this art. Some of the health magazines advocate holding the handkerchief over both nostrils when the nose is blown. This is a dangerous procedure. With a little too much force and with closing the nostrils even for a moment infection may be blown into the middle ears. The Valsalva method of inflation of the eustachian tubes is mechanically the same. My contention, therefore, is that only one nostril be closed, leaving the other open, in blowing the nose. According to Morrison¹⁰ this should be done gently, forcing the air through the less obstructed side first, and hawking as much of the secretion as possible into the pharynx for expectoration before blowing the nose. In this way it is almost impossible to inflate the middle ear. The best method, of course, and the safest, is the peasant style when no handkerchief is used at all.

Occasionally antrum lavage must be resorted to, and sometimes more radical surgery may be necessary. Foci of infection of obstructing tissue, such as tonsils and adenoids, should be removed between attacks.

In the treatment of sinusitis in general, perhaps more in the chronic adult type of antrum infection, two recent methods deserve mention. Goodyear¹¹ at the ninety-second session of the American Medical Association, Cleveland, June, 1941, gave a lantern demonstration showing that the use of iodized oil (Iodochloral, Searle) greatly reduces the number of treatments usually given in acute and subacute antral infections. Turnbull¹² using a 5 per cent solution of sulfathiazole sodium (Squibb) as a nasal spray twice daily reported a series of forty-seven patients with chronic sinusitis in whom all but seven reported definite improvement and relief of symptoms following this therapy. Incidentally, he also reported striking results in the treatment of both chronic staphylococcal conjunctivitis and chronic suppurative disease of the ear with sulfathiazole. The freshly prepared solution 5 per cent was dropped into the eye without irritation or instilled into the ear every night over a long period of time without toxic symptoms. As a nasal spray, no untoward reactions were noted over a period of five months. We are now using both of these treatments as adjuncts in selected cases and hope to report at a later date our own conclusions therefrom.

May I also say a word in reference to the complication of otitis media? Following acute head in-

flammation it is found overwhelmingly in children who are subject to colds and who still have their adenoids harboring organisms at the mouth of the eustachian tube. In the child the eustachian tube is shorter, wider and more horizontal than in the adult. Hence the ease with which the invading organism reaches the middle ear. Because the eardrum of a child is thicker, tougher and more slanting supero-posteriorly than in the adult, delayed adequate treatment is favorable to a further complication of acute mastoiditis.

It is our custom in early acute otitis media, where the drum is not bulging very much, to prescribe a proprietary ear drop known as "Auralgan." It apparently acts on the principle of osmosis, is soothing and in no wise obscures the existent color of the drum. It is surprising how many of these ears will clear with conservative treatment. However, if the ear-drum is definitely bulging, we feel that a myringotomy is imperative. Such an operation relieves the endangering pressure, relieves the pain and is almost certainly preventive of other complications. Besides, after the middle ear has drained and cleared, the incision usually heals without scar or impaired hearing. To wait for a drum to rupture is to invite mastoiditis, intracranial complications, or at least a large perforation in the drum which may never close, favorable to intermittent or chronic discharge.

Should conservative treatment fail or if myringotomy is performed or the drum has ruptured and a specimen of the discharge is obtainable, we make a microscopic smear to determine the infecting organism and immediately place the patient on the appropriate sulfonamide. Miraculous cures have been reported under routine treatment plus this new type of chemotherapy.¹³

After all is said and done, we must conclude that the etiology of the common cold is not definitely determined. It would appear, however, that of all the possibilities of personal prophylaxis, the building up of the patient's resistance to the common secondary invaders, together with conservative, corrective surgery and early and persistent medical treatment, offers the best promise of satisfactory results. The following points, therefore, may be stressed as being of importance:

- (1) The common cold should be treated vigorously from its very inception. Copavin is the drug of choice.
- (2) Nose drops, if indicated, should never be used

at night, for fear of lipoid pneumonia. Isotonic solutions of ephedrine or benzedrine vapor are safer, and especially for children at all times.

- (3) The surgical removal of obstructions to ventilation and drainage is often required, particularly in children, as a cold-preventive procedure.
- (4) Both child and adult should be taught the proper method of blowing the nose and expectorating.
- (5) Two complications of the common cold, sinusitis and otitis media, are discussed, with special reference to routine and newer methods of treatment.

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HISTOLOGICAL STUDIES OF THE HYPOTHALAMUS

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The purpose of this paper is an attempt to throw some light on the regional structures of the hypothalamus with emphasis on the distribution of cells as well as their function.

Although the first contributions to our knowledge of the hypothalamus were made by Kölliker and von Lenhossek,¹ it was E. Malone² who worked out the histological details of the various hypothalamic nuclei (areas) while Rioch, Wislocki, O'Leary and others recently subdivided the hypothalamus into topographical regions.

The problems which were paramount in this investigation were: the localization of both the motor-like as well as the neurosecretory cells as described by Malone, Greving, Grinker and the Scharrers.

MATERIAL AND METHODS USED

Our studies were made on six uninjected brains of normal individuals, two of which were removed at autopsy 2 to 6 hours after death; the others had the autopsies done on the second day after the exitus. Due to rapid degenerative changes in the central nervous system and also for the sake of accuracy, we are reporting only on the two brains

removed 2 to 6 hours after death. Transverse vertical sections of the hypothalamus extending from just behind the anterior commissure to the level of the mammillary bodies were made. The brains were fixed in 95 per cent ethyl alcohol and stained by one of the following methods: Weil stain³ for

EXPLANATION OF FIGURES

Fig. 1.—Motor-like triangular cells of the anterior hypothalamus just caudal to the anterior commissure. Low power. Bodian stain.

Fig. 2.—Cell resembling a large motor cell in the anterior part of the hypothalamus just caudal to the anterior commissure. Oil. Bodian stain.

Fig. 3.—Betz-like cell of the anterior hypothalamus just behind the anterior commissure. Oil. Bodian stain.

Fig. 4.—Pyramidal cell of the motor cortex for comparison. Oil. Bodian stain.

Figs. 5 and 6.—Cells resembling anterior horn cells of the spinal cord from the anterior hypothalamus caudal to the anterior commissure. Oil. Erythrosin-toluidin blue stain.

Fig. 7.—These cells are from the same field as figure 1. Oil. Bodian stain.

Fig. 8.—Typical cells from the hypothalamus caudal to the anterior commissure. Oil. Bodian stain.

Fig. 9.—Motor-like cell of the medial hypothalamic region rostral to the mammillary bodies. Oil. Weil stain.

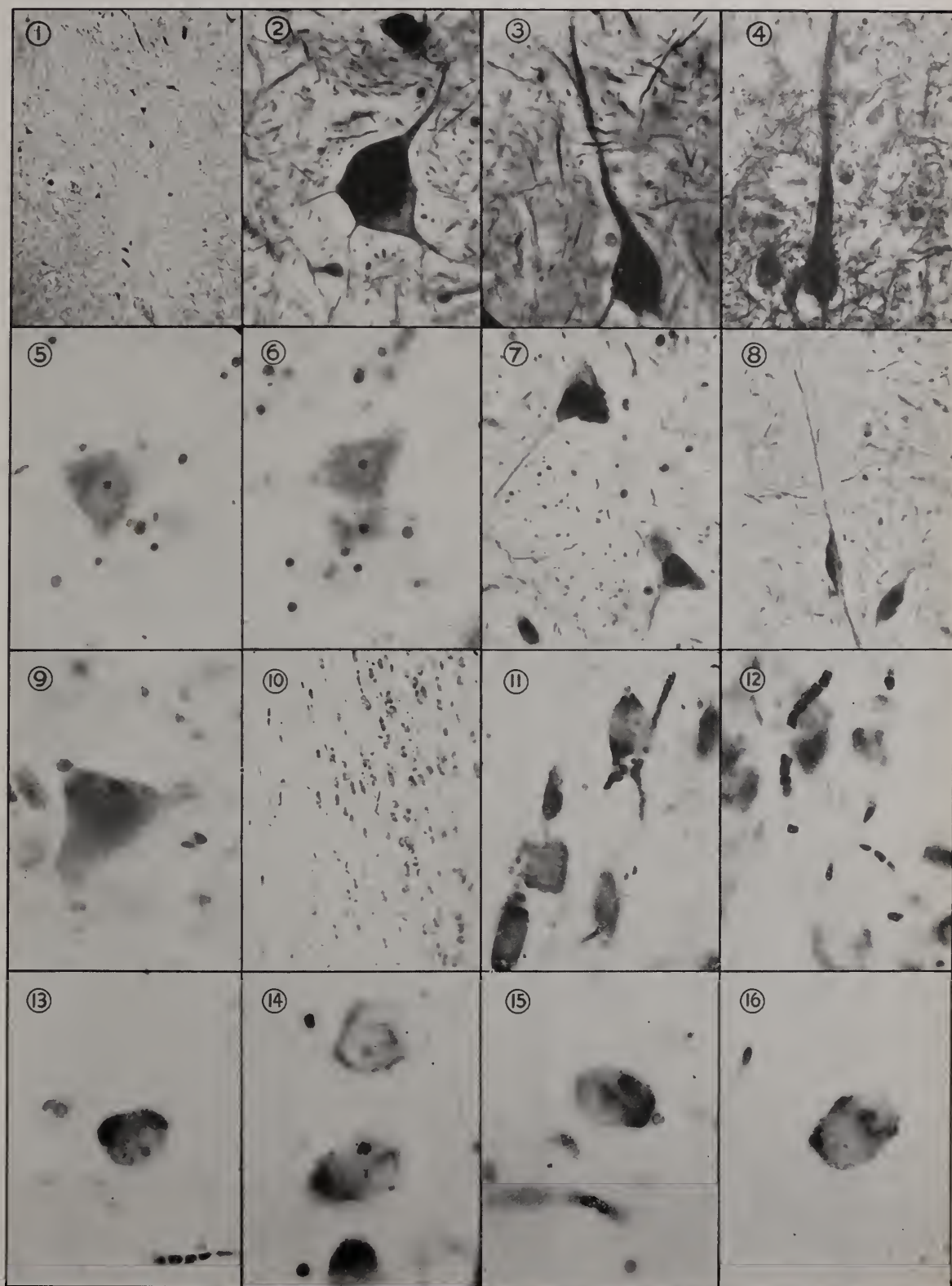
Fig. 10.—Rich capillary network surrounding the probable neurosecretory cells in the region of supraoptic and paraventricular nuclei. Low power. Erythrosin-toluidin blue stain.

Figs. 11 and 12.—Same field as figure 10. Oil.

Fig. 13.—Probable neurosecretory cell with vacuole and granular-like inclusions. Region of the supraoptic and paraventricular nuclei. Oil. Erythrosin-toluidin blue stain.

Figs. 14, 15 and 16.—Probable neurosecretory cells with granular-like inclusions. Area of the supraoptic and paraventricular nuclei. Oil. Erythrosin-toluidin blue stain.

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myelin sheaths; erythrosin-toluidin blue stain⁴ for cellular structure; Bodian silver stain⁵ for axis cylinders; and Foot's modification of Masson's stain for granules.

In the available literature stress is laid on the presence of motor-like cells in the posterior and lateral regions of the hypothalamus. Our studies, however, point to a distribution of these cells not only in the above mentioned areas but also in the anterior and medial regions. The structure of these cells is identified not only by their external morphology (figures 1, 2, 3, 4) but also by the large Nissl bodies in a stripe-like arrangement similar to the Betz and anterior horn cells (figures 5 and 6). In a report on somatic movements obtained from stimulation of the hypothalamus, J. C. Hinsey¹ stated: "Our experiments show that the stimulation of areas in different parts of the hypothalamus as well as the subthalamus give, in addition to the visceral responses, somatic movements involving the head, trunk and extremities."

The above findings, as well as those of Ranson, Ingram and others, seem to indicate that not only motor-like cells but also other cortical cells, Betz-like, Golgi-like and others should be found in all hypothalamic regions, some of which are shown in figures 1 to 9, inclusive. This is probably another proof that the hypothalamus may be considered as one of the oldest parts of the brain.

Similar to the Scharrers, Gaupp and other investigators who demonstrated the presence of neurosecretory cells in the supraoptic and paraventricular regions, we studied both the nature of the cellular inclusions of these cells as well as the highly vascular network in which the cells are embedded.

The photomicrographs of these regions (figures 10, 11, 12) show an area which is pierced with a defense meshwork of blood vessels located in marked proximity to these cells. Most of the capillaries are in the long axis of the cells as if hugging them, and, according to the Scharrers, this vascular arrangement is not seen in any other part of the central nervous system. Such a distribution of blood vessels resembles very markedly that of other organs of internal secretion.

While nerve cells of other hypothalamic regions

contained dust-like, greenish-brown granules of pigment scattered indiscriminately throughout the cytoplasm, many of the cells of the supraoptic and paraventricular areas were vacuolated, each vacuole separated from the nucleus by a thin wall with spherical black granules centrally located. In still other cells definite black granules could be seen (figures 14, 15, 16). In our studies the above were seen better by the erythrosintoluidin blue stain than by Foot's modification of the Masson stain used by the Scharrers.

CONCLUSIONS

An attempt was made to show that:

1. Motor-like cells are found in practically all areas of the hypothalamus.
2. These cells resemble the structure of motor cells found elsewhere, such as the Betz cells and those of the anterior horn of the spinal cord.
3. Also other types of cells of the central nervous system are found in the hypothalamus.
4. The presence of a dense capillary network, together with vacuolated cells in which granules are to be seen, point to a probable endocrine function of the anterior hypothalamic region.

We gratefully acknowledge the assistance of Dr. Beverley R. Tucker, The Nemours Foundation, and the Department of Pathology of the Medical College of Virginia.

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CONVULSIONS ASSOCIATED WITH GENERAL ANESTHESIA *

Report of Three Cases

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The first observation of muscular activity occurring during the administration of ether was noted in 1880. During the years of the World War, this manifestation was reported by several observers. Most of the literature on this subject comes from England. The latest review of this subject in this country, together with an original correlated clinical and experimental study, emanates from the Mayo Clinic.

Ether is the agent that has most frequently been associated with this syndrome. Most cases occurred in children or young adults. Many of these convulsions have terminated fatally.

In 1916, it was noted that epileptiform convulsions occurred frequently during the course of anesthesia in patients with an epileptic history. The largest number of reported cases, however, occurred in patients without a known epileptic history.

There is a great deal of controversy in regard to the etiology of convulsions which occur during general anesthesia. In an article on this subject there are references to eighty-eight papers by various authors. Some of the theories as to etiology sound fanciful. A British author in 1927 wrote: "It would appear the anesthetic substances act by subjecting protein particles in the plasma to sudden dehydration and then to an equally sudden hydration . . . The actual state in which the patient's protein particles happen to be before the anesthetic is administered must play a greater part in the production of toxic symptoms."

Another British author in 1931 advanced the hypothesis that "increased vascularity of the cortex cerebri, more particularly of the Rolandic area, produced by histamine effect, is the underlying cause."

The present state of knowledge or lack of knowledge concerning this syndrome, as well as its distressing dramatic manifestations, makes the report of cases desirable. It may stress the importance of being on the alert for such a condition.

REPORT OF CASES

Case 1. B. H. D. (4552) four years old, was first examined March 2, 1932. Three and one-half

months previous to examination, he had a convulsion. Since then, he suffered what the parents described as "fainting spells". Examination, with the exception of hypertrophy, or perhaps infection, of the tonsils, and an adherent prepuce, was entirely negative. Tonsillectomy and circumcision were advised. Three months later (May 21, 1932) both operations were performed under ether anesthesia. The child reacted normally from the anesthetic, recognized his parents, and a few hours later took water and ate some ice cream. About nine hours after the anesthetic, he was seized with epileptiform convulsions and died in an epileptic seizure.

This case varies from the typical reported cases of epileptiform convulsions during ether anesthesia in that it occurred, not during, but many hours after, the administration of the anesthetic.

Case 2. B. Y. (8658) was first seen on September 11, 1936, at three years and three months of age. The complaint was "whistling constantly until he is breathless, a constant discharge from the right nostril since birth, refusal to play with others, refusal to talk to others, refusal to play with toys, and the desire to be alone at all times." Examination did not reveal anything abnormal, except congenital obstruction of the posterior nares. He was referred to a rhinologist, who relieved the obstruction by operative procedure. The child was seen again on April 19, 1937, when he was three years and ten months old. The complaint then was that he was nervous. His breathing on that occasion was rather rapid and sounded asthmatic. While apprehensive and very nervous, he did not give the impression of being in any way mentally abnormal. Examination revealed a mild degree of undernutrition and anemia. May 30, 1938, eleven months after an attack of whooping cough, he was seen again (five years of age). The parents stated that the boy was weak, though his general appearance was healthy. His breathing was noisy. Examination did not show any asthma. The tonsils were found to be enlarged. Sedative medication, tonics, cod liver oil, and adequate rest were prescribed. The parents were told that the noisy breathing might be due to adenoids aggravated by enlargement of the tonsils. Tonsillectomy and ade-

*Read before the South Piedmont Medical Society, April 17, 1941, at Danville, Va.

noidectomy were recommended. Subsequently, the child was taken to Duke Hospital. Hyperpnea and marked hypertrophy of the tonsils and adenoids, stenosis of the right naris, posteriorly, and lack of normal rise in the blood-sugar curve were noted. (Fasting blood-sugar, 78 mg. per 100 cc.; thirty minutes, 101 mg. per 100 cc.; one hour, 86 mg. per 100 cc.; two hours, 82 mg. per 100 cc.; three hours, 80 mg. per 100 cc.) Tonsillectomy and adenoidectomy were recommended. My own opinion was that the blood-sugar curve did not deviate from the normal and that a fasting blood-sugar of 78 mg. per 100 cc. of blood did not suggest a hypoglycemia, even though the rise in sugar after thirty minutes was only 21 mg. September 3, 1938, at five years and two months of age, tonsillectomy and adenoidectomy were performed. He reacted normally to the operation. The morning following the operation the child was in a profound coma and slightly cyanotic. Breathing was fast and labored, and the pulse faint and rapid. 20 cc. of 5 per cent dextrose solution were given in the external jugular vein. Blood-sugar determination in the laboratory before administration of the dextrose was reported as 30 mg. per 100 cc. A few hours later the pulse was imperceptible and the child looked moribund. 20 cc. of 50 per cent glucose were given in an arm vein, followed by 100 cc. of 5 per cent dextrose in Ringer's solution. The general appearance of the child and the pulse improved rapidly. Towards evening, his pulse was full and strong; he was able to take food. Monday, September 5, he seemed well. Tuesday, September 6, the child was taken home in apparently good condition. A few hours later he became cyanotic, dyspneic, and comatose. 20 cc. of 50 per cent glucose were administered intravenously and 5 cc. of calcium gluconate intramuscularly. He regained consciousness slowly. The temperature was 103.7. Generalized twitchings or athetoid movements of the upper extremity were noticed. A blood-sugar, taken at 11 A. M., before administration of glucose, showed 133.3 mg. per 100 cc. Blood-sugar at 5 P. M. was

133.3 mg. per 100 cc. The child progressively improved. Sunday, September 11, he appeared to be normal. (The finding of 30 mg. per 100 cc. of blood in the blood-sugar determination at the hospital was perhaps due to error.)

April, 1939, when he was five years and ten months, he had a typical grand mal convulsion. Since then, he has been suffering marked mental deterioration.

In retrospect, it would seem that since early childhood he has been suffering from an atypical form of epilepsy—perhaps *petit mal*. The periods of nervousness, which the parents have observed throughout the years, might have been merely the prodroma of *petit mal*, lasting only a second, which have never been recognized.

Case 3. J. G. C. (8199) was first examined July 15, 1939, when he was two years of age. The complaint then was "nervousness, lack of appetite, constipation, and the passing of a roundworm two weeks previous". Examination did not reveal anything abnormal. Simple dietetic measures and an iron preparation were prescribed. July 27, 1940, at three years of age, laparotomy was performed for a ruptured appendix. The appendix was removed, drains were inserted, and the abdomen closed in the usual manner. After the last skin suture had been put in, the child had typical epileptiform seizures, which terminated fatally.

The convulsions in the last case may not have been due to anesthesia. It is possible that they were due to embolus, yet, because of the possibility of their having been due to anesthesia, the report of this case seems justified.

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EXPERIENCES WITH PARAVERTEBRAL BLOCK OF LUMBAR SYMPATHETIC TRUNK*

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The beneficial effect of novocain infiltration of the lumbar sympathetic trunk in thrombophlebitis of the lower extremity was first reported by Leriche¹ in 1934. Ochsner^{2,3,4} and his associates in this country have reported extensive experiences with this procedure in the same condition. They have also shown that the symptoms and sequelae of thrombophlebitis are due to disturbed physiology as a result of extensive clinical and experimental observations,⁵ which have given a logical basis for the paravertebral injection of the lumbar sympathetic trunk with novocain. Briefly, we shall review the physiopathology of thrombophlebitis and cite some of the experiences with the procedure in this condition and also in certain other pathological vascular conditions at the Medical College of Virginia and in our own private practice.

A balance is normally maintained between the arterial, venous and lymphatic circulations of the extremities by the sympathetic system. It has been recognized that certain pathological conditions, such as thrombo-angiitis obliterans, through reflex paths by way of the sympathetic trunk, cause vasospasm. Ochsner has shown that a similar type of disturbed vasospastic state exists in thrombophlebitis.

PHYSIOPATHOLOGY

It has been generally held that the edema associated with thrombophlebitis is the result of the mechanical blocking of the venous system by the intravascular clot, and also by the obstruction of the lymphatic system by perivenous inflammatory changes, this in turn producing an increased transudation of vascular fluids into the perivascular spaces. The fact that the ligation of the main venous trunk of an extremity does not produce edema is against this theory. Leriche, in his original report in 1934, felt that the edema was the result of venous spasm. Ochsner has further elaborated on this theory and feels that there is an additional factor of arteriospasm that is even of greater importance. To explain this, the normal physiology of the exchange of fluids between the vessels and tissues must be

briefly reviewed. There is a balance between the amount of fluid going out of vessels into tissues and the amount going out of the tissues into vessels. The difference in pressures in the intravascular and perivascular spaces, or filtration pressure, favors the passage of fluid into the tissues. The passage of fluid from tissues into vessels, on the other hand, is favored by the greater osmotic pressure existing in the vessels and by the lymphatic flow, which, in turn, is dependent on the arterial pressure. As a result of clinical and experimental observations by Ochsner and his associates, it has been shown that venous spasm causes an increase in the filtration pressure, which favors the passage of fluid from vessels into the tissue spaces. Arteriospasm causes a decrease in arteriolar pressure, which results in a decrease in the lymphatic flow, which, in turn, causes a decrease in the return of fluid from the tissue spaces into the lymphatic vessels. In addition, the anoxemia resulting from the decreased arterial flow causes an increase in the permeability of the capillary endothelium, which results in a greater escape of fluid from the vessels. Finally, the accumulation of proteins in the tissues tends to upset the osmotic pressure, with a resulting diminishment of the flow of fluids from the tissues into the vessels. It has been shown that the vasospasm, arterial and venous, is initiated by impulses from the thrombosed segment through the sympathetic nervous system. The blockage of this pathway, either by injection of novocain or surgical excision, will overcome the condition and cause a rapid return to the normal physiological state. Our experiences, and those of other observers, have been that there has been a marked improvement in all cases of thrombophlebitis in which the lumbar sympathetic trunk has been injected. The injection should be repeated every two or three days until all symptoms have subsided. There has been almost immediate relief of pain, followed by a rapid return of the temperature to normal and a decrease in edema, if present. The course has been shortened from an average of six to eight weeks to two weeks. Most encouraging results have been obtained in the acute cases, but improve-

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ment has also been noted in a number of instances of chronic thrombophlebitis.

ACUTE THROMBOPHLEBITIS

Four cases of acute thrombophlebitis have been injected with novocain. In only one of these was the injection repeated. Each of these patients had fever ranging between 100 and 103 F., and, following the injection, there was a fairly rapid return of temperature to normal. With one exception, these patients were pronounced as well within two weeks, or less, from the time the thrombophlebitis was first diagnosed. In the other case, all symptoms and signs had completely disappeared three weeks after the onset. Edema was only of significance in one patient. This case history is of interest.

CASE 1.—G. S., a colored female, aged forty-four years, was admitted to St. Philip Hospital, December 9, 1939, for removal of a large fibromyomata uteri that extended up to the level of the ensiform cartilage. Because of an upper respiratory infection, she was not immediately operated upon. On December 15, 1939, the left leg was found to be swollen, red and hot to palpation, and a diagnosis of left femoral thrombophlebitis was made. The left lumbar sympathetic trunk was injected with novocain on December 18, 1939. The temperature, which had been ranging between 100 and 102 F., was normal by December 22. The edema also rapidly decreased and the leg was pronounced as well on December 24, 1939, nine days after diagnosis was first made. A supravaginal hysterectomy was done on December 28, 1939. The postoperative course was uneventful and the patient was discharged January 12, 1940. The measurements of the two legs in this case were as follows:

MEASURE- MENTS	RIGHT (NORMAL)	LEFT 12/18/39	LEFT 12/20/39	LEFT 12/22/39	LEFT 12/24/39
Foot	24.5 cm.	27.7 cm.	24.0 cm.	22.5 cm.	22.0 cm.
Ankle	20.5 cm.	24.0 cm.	24.0 cm.		
Calf	28.5 cm.	35.0 cm.	35.0 cm.	34.0 cm.	32.0 cm.
Knee	35.5 cm.	41.5 cm.			
Low thigh	44.5 cm.	51.0 cm.	50.0 cm.	49.5 cm.	45.0 cm.

CHRONIC THROMBOPHLEBITIS

The lumbar sympathetic trunk has also been injected in patients with edema of extremities due to chronic thrombophlebitis or chronic lymphedema. There have been four of these patients, two of them having been injected with alcohol and two with novocain. All four cases showed a rapid decrease in the edema, and, when last heard from, had had

no recurrence of it. In one patient, the result was so dramatic that the case history will be briefly cited.

CASE 2.—A. L. P., a white female, aged sixty-five, was seen in consultation on February 9, 1941, with regard to the advisability of injection of the lumbar sympathetic trunk because of thrombophlebitis of the right femoral vein, which had been present approximately four months. The right leg had suddenly become red, tender and swollen about October 9, 1940, for no apparent reason. She was admitted to a local hospital for study and treatment on October 19, 1940. A thorough examination did not reveal any possible focus of infection or any other pathology. The treatment consisted of elevation of the leg with hot packs and heat cradle. This therapy was carried out for a period of four weeks without any decrease in the swelling of the right leg. Several days before discharge home on November 17, 1940, the left leg became slightly swollen, red and tender. The same therapy was continued at home, and the patient was still confined to her bed when seen on February 9, 1941. The swelling of the left leg, in the meantime, had completely subsided, but there was still marked edema of the right extremity. The right lumbar sympathetic trunk was injected with absolute alcohol on February 10, 1941. The right foot, which had felt cold to the patient, became warm within five minutes after the injection. The edema and tenderness rapidly subsided and the patient was able to go to church on Easter Sunday, April 13, 1941. At the present time the patient still has edema of both ankles after being up all day, but this subsides during the night. The measurements in this case during the hospital admission were as follows:

RIGHT LEG	8/23/40	8/30/40	11/5/40	11/15/40
Ankle	8½ in.	8 in.	7½ in.	8¼ in.
Calf	15¼ in.	14½ in.	13¼ in.	14½ in.
Knee	15½ in.	16 in.	15 in.	16½ in.

The following measurements show the decrease in the circumference of the leg following alcohol injection of the lumbar sympathetic trunk on February 10, 1941:

	RIGHT LEFT-NORMAL	RIGHT 2/10/41	RIGHT 2/17/41	RIGHT 3/3/41
Ankle	8¾ in.	10½ in.	11 in.	9¼ in.
Lower 1/3 Leg	10 in.	12 in.	12½ in.	10¼ in.
Mid Leg	12½ in.	14 in.	14½ in.	12½ in.
Calf	14 in.	16½ in.	17 in.	14 in.

	RIGHT—5/10/41	LEFT—5/10/41
Ankle -----	9¾ in.	9¾ in.
Lower 1/3 Leg -----	12½ in.	12½ in.
Calf -----	15 in.	15 in.

Measurements are circumferences at indicated levels.

ISCHEMIC GANGRENE

It is not generally realized the extent to which the sympathetic system exerts a vasospastic effect on the collateral circulation of the extremities. The dilatation of the collateral channels, by blocking the sympathetic trunk, may be sufficient to prevent the development of ischemic gangrene in such conditions as ligation of major peripheral vessels in trauma, aneurysm operations and also in cases of arterial embolism. The writer,⁶ in association with Lehman and Murphey, has shown, experimentally, that in rabbits lumbar sympathectomy reduces the instance of gangrene following ligation of the common and external iliac arteries from 76.9 per cent to 43.7 per cent, which indicates what may be expected in the human. Ochsner⁷ has reported four cases of arterial embolism in which the lumbar sympathetic trunk was injected without the development of ischemic gangrene in any patient. The gangrene rate in arterial embolism in several series, which have included a large number of cases in which embolectomy was done, has been reported at 40 to 70 per cent. The report of one case of arterial embolism that was injected follows:

CASE 3.—M. C. M., a white female, aged seventy-four, was first seen at home in surgical consultation on January 5, 1941, because of dry gangrene of the left lower leg, which had already begun to demarcate at the junction of the upper and middle thirds of the lower leg. Ten days before, the patient had first complained of pain in the right leg and foot. The gangrene was first noticed three days before consultation. The patient had arteriosclerotic heart disease and was fibrillating. The peripheral vessels were arteriosclerotic and no pulsation of any of the major vessels could be made out in either extremity. A diagnosis of gangrene due to arteriosclerosis obliterans was made. The patient was admitted to the Retreat for the Sick Hospital, January 6, 1941. Examination at this time revealed that she was a mild diabetic. Due to a temporary mental disturbance, the left leg was not amputated until January 10, 1941, when a mid thigh amputation was done under spinal anesthesia. At operation a clot

was found in the femoral artery at the level of amputation. In view of this finding with a fibrillating heart, the diagnosis was changed to ischemic gangrene, due to arterial embolism. Convalescence was uneventful until late in the evening of January 18, 1941, when the patient suddenly complained of pain and coldness in the right foot. Attention, unfortunately, was not called to this until the next day. Examination at that time, approximately fourteen hours after the onset of symptoms, showed a demarcation between warmth above, and coldness below, at the level of the mid thigh. There was also a definite bluish discoloration of the tissues about the ankle. The femoral artery was felt pulsating at the fossa ovale, but no pulsations could be made out below this point. A diagnosis of arterial embolism, with beginning ischemic gangrene, was made. The right lumbar sympathetic trunk was injected with alcohol and the leg wrapped in cotton wadding and a blanket. Papaverine Hydrochloride, grains one-fourth, was given every four hours. The morning after the injection, the leg was warm down to a point midway between the knee and ankle. By the evening of this day, the warmth extended to the ankle. The next morning, the second day after the injection, the entire leg was found to be warm. The discoloration about the ankle rapidly disappeared and the patient was discharged on January 27, 1941; and, when we last heard from her, the circulation of the extremity was adequate.

The collateral circulation may have been sufficient to have taken care of this extremity, but, certainly, the injection of the lumbar sympathetic trunk dilated all of the channels to the fullest extent. One other patient with this condition has been injected but the involved extremity was already in an advanced stage of gangrene, the injection only being done as amputation was out of the question, due to the patient's age and poor general condition.

With some hesitation as to any possible benefit that might result, eight cases of arteriosclerosis obliterans, with deficient circulation in the extremities, resulting in various stages of gangrene, have been injected. We have been surprised at the increase in the temperature as noted by the palpating hand in most of these patients, and also at the relief of pain whenever present. In six of these patients, marked improvement in the gangrene resulted, and possibly a major amputation prevented. In one of the unimproved patients, the gangrene involved the entire foot

at the time of the injection, and no improvement could have been expected following this. In the other patient, one toe had to be amputated, due to progression of the gangrene, in spite of the injection. It is our opinion that lumbar sympathetic trunk injections will tide many patients over an acute local gangrene and prevent a major amputation. To say the least, the injection will establish the best available circulation to the extremity.

Three patients with bilateral frost bite have also been injected. Improvement was noted in all but one extremity. This had to be amputated because of the development of a gas bacillus infection.

TECHNIQUE OF INJECTION

The technique of lumbar sympathetic block is as follows: The patient is placed in the lateral position with the side to be injected "up". Regular spinal needles are inserted at the level of the first, second, third and fourth lumbar vertebrae at points two finger breadths lateral and on the level with the lower border of the spinous processes. The needles are inserted vertically until the transverse processes are impinged upon. The direction of the needle is then altered so that it is directed over the process and slightly inward. It is inserted for a distance of five centimeters, which should bring the point of the needle in close proximity to the lumbar sympathetic trunk lying along the side of the body of the vertebra. Five cubic centimeters of novocain are injected into each needle, after first withdrawing the plunger of the syringe to be certain that the needle is not in a major vessel. Within a very few minutes, a noticeable increase in temperature over the extremity should be evident to the patient and also by palpation to the observer. A slight flushing of the skin usually becomes noticeable. Ochsner has also remarked on the dryness of the skin and also on the fact that the veins become more prominent on the injected side. In some few instances, we have injected absolute alcohol after we have been certain

of the effect of the novocain injection, but Ochsner⁸ has recently reported that some of these cases in his hands have had alcoholic neuritis, which has caused a very painful back. It is believed that repeated injections with novocain is the better procedure when a prolonged effect is desired. A surgical excision of the lumbar sympathetic trunk should be done to produce a more permanent result in chronic cases which have shown improvement following the novocain injection.

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BLOOD PRESSURE IN RELATION TO AGE, WEIGHT, AND HEIGHT An Analysis of 15,225 Blood Pressure Determinations

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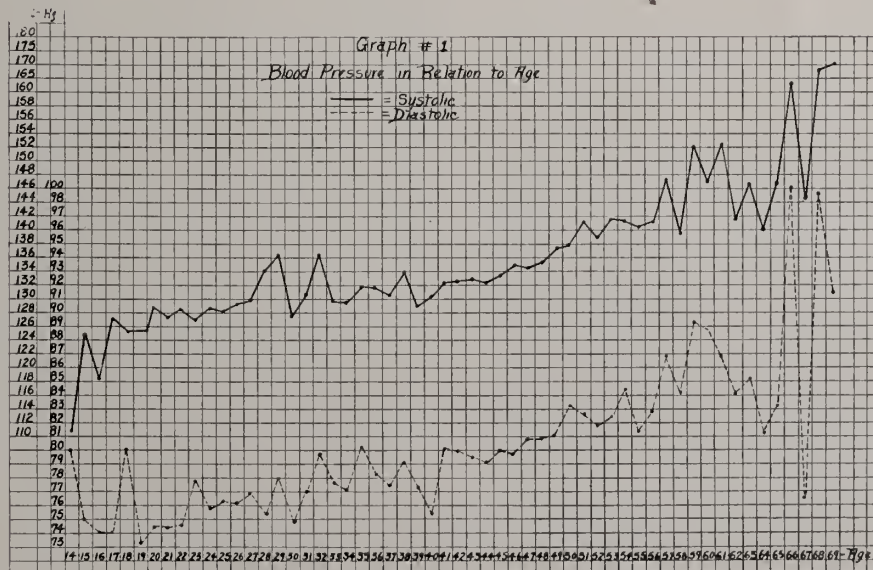
In the course of the routine pre-employment examinations at the Radford Ordnance Works, a study of the relation between blood pressure for each age,

weight, and height in a group of 15,225 male applicants was made.

The blood pressure determinations were obtained

TABLE No. 1
BLOOD PRESSURE IN RELATION TO AGE

AGE	NUMBER	BLOOD PRESSURE					
		AVERAGE SYSTOLIC	AVERAGE DIASTOLIC				
14	1	110.0	80.0	44	251	132.5	79.1
15	2	125.0	75.0	45	255	133.6	80.0
16	10	118.4	74.0	46	212	134.8	79.8
17	41	127.9	74.0	47	174	134.7	80.8
18	431	125.2	80.1	48	227	135.4	80.9
19	550	125.4	73.2	49	158	137.2	81.0
20	594	128.3	74.5	50	165	137.9	83.2
21	653	127.4	74.4	51	126	141.1	82.7
22	299	128.3	74.6	52	147	139.0	81.9
23	685	127.0	77.9	53	99	141.8	82.5
24	666	128.5	75.8	54	135	141.5	84.5
25	621	128.1	76.4	55	112	140.7	81.5
26	646	129.4	76.1	56	98	141.3	82.9
27	623	129.8	76.9	57	61	147.5	86.9
28	540	134.0	75.3	58	67	139.8	84.3
29	519	136.1	78.0	59	50	152.0	89.4
30	562	127.8	74.8	60	45	147.2	88.8
31	505	130.3	78.0	61	21	152.3	86.9
32	412	136.2	80.7	62	29	141.8	84.2
33	480	129.9	77.6	63	19	146.3	85.1
34	400	129.7	77.1	64	16	140.0	81.2
35	418	131.9	80.3	65	13	147.1	83.2
36	388	131.9	78.4	66	10	163.6	100.0
37	355	130.6	78.4	67	6	144.3	76.6
38	368	133.9	79.1	68	5	168.4	99.4
39	319	129.0	77.4	69	7	170.0	91.4
40	363	130.2	75.3	70	1	130.0	70.0
41	276	132.2	80.3	71	2	110.0	70.0
42	313	132.6	80.0	72	1	150.0	80.0
43	270	132.9	79.6	73	1	180.0	104.0
				74	1	144.0	94.0
				75	0	----	----
				76	0	----	----
				77	1	180.00	100.0
				Total 15,225			



with the applicant seated, using standard, mercurial sphygmo-manometers, with the cuff applied just above the right elbow, auscultation being applied at

the distal end of the brachial artery.

These data include all applicants, i. e., those who passed the examination and those who were rejected

because of hypertension, hypotension and all other causes.

The average systolic and diastolic pressures were obtained simply by adding all the figures in each group and dividing the total by the number of men in each group.

A study of Table No. 1, which is illustrated by Graph No. 1, reveals that there is a definite correlation between age and blood pressure. This is true for both systolic and diastolic pressures but is more obvious for the systolic.

A study of Table No. 2, which is illustrated by Graph No. 2, reveals that there is a definite corre-

A study of Table No. 3, illustrated by Graph No. 3, reveals that there is no correlation at all between

TABLE No. 3

BLOOD PRESSURE IN RELATION TO HEIGHT

HEIGHT	NUMBER	AVERAGE SYSTOLIC	AVERAGE DIASTOLIC
5'	16	130	75
5' 1"	20	134	78
5' 2"	53	129	76
5' 3"	110	132	77
5' 4"	306	131.33	78.19
5' 5"	703	129.41	77.77
5' 6"	1200	129.64	77.05
5' 7"	1799	128.39	76.58
5' 8"	2118	130.44	77.34
5' 9"	2650	131.37	85.62
5' 10"	2244	130.30	77.00
5' 11"	1693	136.51	77.43
6' 0"	1179	138.55	88.69
6' 1"	550	127.65	75.31
6' 2"	257	127.28	75.40
6' 3"	98	129.15	76.00
6' 4"	16	135.75	78.93
6' 5"	6	129.83	73.83
6' 6"	7	141.43	84.43

Total 15,225

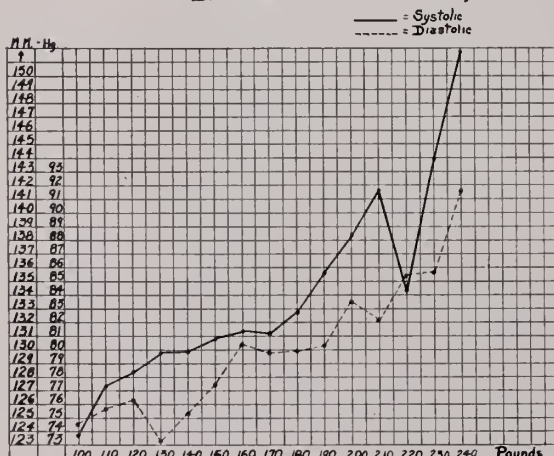
TABLE No. 2
BLOOD PRESSURE IN RELATION TO WEIGHT

WEIGHT	NUMBER	AVERAGE SYSTOLIC	AVERAGE DIASTOLIC
110	99	123.86	74.35
110	513	127.10	75.78
120	1684	128.54	76.22
130	2848	129.64	73.24
140	3340	129.72	75.06
150	2696	130.91	77.14
160	1811	131.33	79.58
170	987	131.03	78.74
180	588	132.68	78.97
190	347	135.41	79.30
200	199	138.15	83.54
210	110	140.69	82.25
220	47	134.40	85.08
230	33	142.63	85.36
240	23	149.91	91.30

Total 15,225

Graph #2

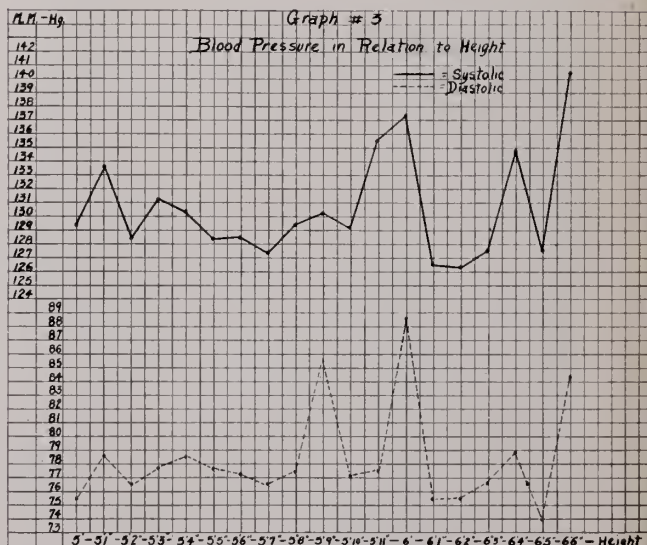
Blood Pressure in Relation to Weight



lation between weight and blood pressure which applies alike to both the systolic and the diastolic.

Graph #3

Blood Pressure in Relation to Height



height and blood pressure either for systolic or diastolic.

SUMMARY

1. Blood pressure increases proportionately to age and weight.
2. Blood pressure is not correlated with height.

Miscellaneous

Average Family Medical Bill Under \$100 a Year*.

Families living on farms, in villages and small cities in the United States, spend approximately 5 per cent of their annual income, or one dollar out of each twenty earned, for medical care.

Their annual bills average less than \$100.00. Amounts spent tend to increase with income, but the percentage of outlay for medical attention on the part of those with small incomes is relatively larger than those in the upper brackets.

Expenditures of farm families in this respect are smaller than those of small-city and village families with comparable incomes, especially at the higher levels.

These are some of the facts brought to light in a survey made by the U. S. Department of Agriculture in cooperation with the Work Projects Administration, and just published in a booklet entitled "Family Expenditures for Medical Care".

The survey, conducted in connection with the study of consumer purchases undertaken to provide comprehensive data on the income and consumption habits of American families, covered selected groups of families living in twenty typical small cities, 140 villages, and sixty-four counties of twelve farm sections in five regions of the country. The project was financed chiefly by WPA funds.

Low-income families tend to economize on dental care, the report reveals. Fewer than half of those in income classes below \$750 had outlays for services of dentists. The proportion increased with income, but even at the upper end of the income distribution where presumably families could afford routine dental examinations, expenditures for this purpose were by no means universal. Less than four-fifths of the families in the upper income units included dental care in their budgets.

Approximately one-tenth or fewer of the families in most income classes below \$2,000 listed expenditures for services of oculists, nurses, surgeons or other special practitioners, or had special examinations. At the higher levels of income the proportion frequently was somewhat greater.

Hospital care was also one of the less used types of services, but there was considerable variation in the proportion of families making such outlays in

the different income classes and among the various groups studied.

Medicine and drugs were much more widely resorted to, being bought by about three-fourths of the families in the small-city, village and farm groups. Average expenditures for these items amounted to \$10 or less a year at most income levels below \$1,500. At higher levels they tended to be greater, but seldom exceeded \$25 annually.

Some families, especially in the lower income classes, restricted their outlays for medical care to purchases of medicines and drugs. That most of them wanted medical services as well as medicine and drugs but were hesitant about spending the money, is indicated by the marked decline in the proportionate number of families so limiting their expenditures when incomes increased.

The great majority of families studied—nineteenth or more to be exact—in each of the nine groups of farm, village and small-city families spent something for medical care. But at most income levels, even those at the upper end of the distribution, there were families with no expenditures for this budget item.

However, some received free services from family members or friends, and some from governmental and private agencies. Those receiving free care from such agencies were comparatively few in number, largely because relief families were excluded from the study.

Services of physicians, surgeons and other practitioners, dentists, oculists, nurses and clinic visits accounted for seven-tenths of the total medical bill of all families studied in the three groups—city, village and farm. Medicines, drugs, eyeglasses and other medical supplies made up approximately 15 to 25 per cent of the total outlay. Health and accident insurance took about 10 per cent of the total in most city and village units, and a smaller proportion in the majority of farm sections.

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for September, 1941, compared with the same month in 1940 and for the period of January through Sep-

*Prepared by Work Projects Administration.

tember, 1941, compared with the same period in 1940 follows:

	SEPT. 1941	SEPT. 1940	JAN.- SEPT. 1941	JAN.- SEPT. 1940
Typhoid and Paratyphoid Fever	55	58	188	188
Diarrhea and Dysentery	999	417	4,140	1,584
Measles	106	42	34,622	3,488
Scarlet Fever	58	62	1,019	1,161
Diphtheria	53	44	314	404
Poliomyelitis	38	81	88	124
Meningitis	10	2	90	57
Undulant Fever	1	5	9	18
Rocky Mountain Spotted Fever	7	3	32	41
Tularemia	0	8	20	37

IMPROVING THE CARE OF PREMATURE INFANTS

Infant mortality has been lowered considerably in Virginia, and in the majority of the States, during the past twenty years. In the age groups from the second to the twelfth month, the reduction generally has been outstanding. However, deaths of infants during the first month of life have been influenced but little. Slightly more than one-half of the infant deaths in Virginia occur during the first month of life; and approximately one-half of the neonatal mortality is ascribed to prematurity. In about one-half of the deaths due to prematurity conditions of the mother have been reported as causal factors.

In Virginia, during the past several years, efforts have been directed towards the improvement generally of the maternal and child health program. Clinics for indigent prenatal, postnatal and infant patients, with the interest and support of local practicing physicians, have been established in considerable number. Now that these basic services for mothers and children are well established, consideration is being given to developing other much needed and related services.

Physicians interested in providing care for premature and immature infants have felt handicapped by the lack of arrangements for such care in many hospitals. While deficiencies in physical equipment, including incubators and separate nurseries for prematures, has often been a problem, the outstanding difficulty frequently has been the lack of specialized nursing services, despite the fact that such services represent the most important simple factor in any program to reduce the deaths of premature and immature infants.

In order that hospitals in Virginia may be given an opportunity to improve their services, when such improvement is indicated, intensive training in the

nursing care of premature infants has been made available. In this connection the State Department of Health, in cooperation with the management and staff of a general municipal hospital with an outstanding obstetric and pediatric service, established a Premature Station and Training Center on October 1, 1940, at a central point within the State. For the first three months, the premature nursing services were supervised by an experienced nurse-supervisor, obtained on a loan basis from the Sarah Morris Hospital in Chicago. Local nurse-supervisors were given special training, and a Station established according to approved standards.

In addition to local services provided, trainees who are graduate nurses with experience in pediatric nursing from various hospitals throughout the State, are offered intensive training in the care of premature infants at the training center for a period of two months. Only two trainees are accepted for any one period. They are given practical experience and didactic instruction. Supervised experience thus is obtained in the nursing care of premature, immature, and normal newborn infants.

Applications from hospitals desiring to have one of their nurses receive this training is made through the State Department of Health. There is no expense to the individual nurse or to the hospital sending the nurse. The nurse-trainees, upon completion of their training, are morally obligated to return to their own hospitals to develop the nursing care of prematures there. Physical equipment of the Training Center contains all the essentials but is relatively simple. One of the advantages of this situation is that the nurses from the smaller hospitals are more readily inclined to attempt to obtain comparatively inexpensive equipment on return to their own institutions.

During the past five years much experimental work with various types of incubators has been conducted by interested staff members of the State Department of Health. A satisfactory incubator, the result of the construction and clinical use of numerous models, has been developed and made available. Patent rights are controlled by the Virginia State Department of Health. This makes possible the furnishing of satisfactory incubators to hospitals in the State on a loan proposition or at a cost which the average hospital easily can afford. "The Virginia Incubator" is relatively simple to operate, provides controlled heat and humidity, with other necessary

and desirable features, and meets the requirements for incubators that recently have been established by the U. S. Bureau of Standards.

A plan has been developed whereby a State Department of Health incubator is made available gratis to those hospitals developing specialized nursing services for premature infants.

While an incubator is a useful accessory in the proper care of premature infants, its importance is quite secondary to the development of specialized nursing service.

Nine representative hospitals, in widely separated areas, have had a nurse complete the course given at the Training Center.

The value of this training has been demonstrated so effectively that it will be continued until all hospitals in the State have been given an opportunity to secure this experience for one or more of their nursing personnel.

Mental Hygiene Activities

It is something of a jolt to one's belief in many things to find that by and large, *en masse*, and on the whole the human personality is the same now as it has been since the beginning of history. In some minor ways reactions of groups have changed, but take the average man now, compare his behavior in similar circumstances with what is known of that of the ancient Egyptian, and the same jealousies, hates, loves are found, as well as other more abnormal forms of personality reactions.

When man became erect undoubtedly his personality changed, but I doubt if any such change has since occurred. Altruism as a general reaction is still in its infancy. The abolishing of slavery, the freeing of women and, recently, the emancipation of children, are all types of human behavior that are based on reactions that are not the general or, shall we say, common reactions of humankind.

The medical history of ancient days clearly delineates most of the abnormal personality responses. Egyptian therapy for the psychoneuroses and melancholia, as well as the other disorders that are now found in and out of our State Hospitals, sounds quite modern, even advanced in some respects. The descriptions by Greek physicians leave no doubt that they were seeing and treating many, if not all the forms of mental disease that the medical profession

of today has to cope with. Indeed, since the so-called normal reactions of the personality have not changed, there is very little reason to think that the abnormal methods of response should change their form. We can conclude then that dementia praecox is as old as history, that melancholia is as ancient or perhaps more ancient than cancer, while the psychoneuroses as such appeared long before tuberculosis. We must realize also that stealing and killing are still among the fine arts. Dueling was legal until the last century. Mass killing is still extolled as the greatest of arts, and we still make heroes of those who manage the slaughter. The Indian boy was taught stealing instead of arithmetic; the politician is suspected of grafting off the public funds, while the shrewd business man studies to stay within the law during his chicaneries. Lying also is widely accepted. Note the cigarette "ads" which decorate our highways.

Abnormal and anti-social personality reactions change slowly. It does not behoove us to be discouraged when we find crime rampant and mental disease everywhere. It does seem time for society to organize the study of its own diseases so that personality disorders can be gradually eliminated. In Virginia there are many studies of this kind in process. Also, many of the findings of the past are now being applied by physicians, by politicians, by sociologists, and many types of social workers. There are many organizations whose reason for being is in part at least their desire to readjust the maladjusted individual. A large number of their aims and purposes are enveloped under the broad term of MENTAL HYGIENE.

The future of The Mental Hygiene Society of Virginia depends on its ability to coordinate the driving power of all these organizations which arise from the determination of thinking people to face their difficulties in order to conquer them. These organizations usually have their day, only to fade as the enthusiasm dies, killed by the exaggeration of false hopes that reach fruition not now, but after many tomorrows. The Mental Hygiene Society is so organized that it is controlled by physicians for the very purpose that there will be no "over selling," but that, in cooperation with interested laymen, those things that are known as well as those that promise definite future results can be spread abroad through the State. The Mental Hygiene Society is primarily an Educational Institution, but it should coordinate all

the energies now directed toward the goal of Mental Health. Its conservatism is its strength, but if it is not backed by an enlightened and interested Medical Profession it will atrophy and die. New ideas and new methods must be given voice and discussed freely in open forum if this society is to act both as a stimulator and moderator of those forces which must be kept alive through the years, and if Virginia is to take its place with the other states now fighting for mental health.

Therefore, it is vital that the physicians of the Medical Society of Virginia continue their support of The Mental Hygiene Society. People outside of the profession are extremely interested in behavior problems and, indeed, there is no form of human ills about which the majority of people know more and about which there is so much misinformation, while within the profession there is a tendency to exclude the mental disorders by pretending that they do not exist. This leads to an inertia and stifles all efforts to obtain medical leadership in this field where it is so greatly needed. The State Mental Hygiene Society is organized on the hope that as the years go on physicians will become better educated regarding personality reactions and more interested. This ideal must be realized if the State Mental Hygiene Society is to survive, for it depends directly on the active support of the physicians of the State.

DAVID C. WILSON, M. D.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.

President-Elect—MRS. H. W. ROGERS, Norfolk.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. A. S. LILLY, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Annual Meeting.

The nineteenth annual meeting of the Woman's Auxiliary to the Medical Society of Virginia closed October 8 after a most successful meeting. The attendance was one of the largest in the history of the Auxiliary, and the reports from the various committees and local auxiliaries showed especial interest and progress in all branches of the work.

Mrs. R. E. Mosiman, president of the Woman's Auxiliary to the American Medical Association, was guest speaker at the "Auxiliary Day" luncheon on Tuesday, the 7th. Mrs. Mosiman outlined the three point program of the auxiliary work for the coming year and her message was most inspiring.

The incoming president, Mrs. E. Latane Flanagan, gave her inaugural address at this luncheon, thereby establishing a precedent as heretofore this address has been made at the annual business meeting.

Following is the list of officers of the Auxiliary for 1941-42:

PRESIDENT—MRS. E. LATANE FLANAGAN, Richmond.

PRESIDENT-ELECT—MRS. H. W. ROGERS, Norfolk.

VICE-PRESIDENTS—MRS. W. CLYDE WEST, Alexandria; Mrs. Louis Kolipinski, Petersburg; Mrs. Paul Pearson, Aylett; and Mrs. Henry Townsend, Marshall.

RECORDING SECRETARY—MRS. HAROLD W. POTTER, Hilton Village.

CORRESPONDING SECRETARY—MRS. A. S. LILLY, Richmond.

TREASURER—MRS. REUBEN SIMMS, Richmond.

PARLIAMENTARIAN—MRS. FLETCHER J. WRIGHT, Petersburg.

DIRECTORS—MRS. SOUTHGATE LEIGH, Norfolk; Mrs. Hawes Campbell, Turpin; Mrs. Henry A. Latane, Alexandria; and Mrs. Griffin W. Holland, Eastville.

STANDING COMMITTEES

ORGANIZATION—MRS. H. W. ROGERS, Norfolk; chairman; Mrs. W. Clyde West, Alexandria; Mrs. Louis Kolipinski, Petersburg; Mrs. Paul Pearson, Aylett; and Mrs. Henry Townsend, Marshall.

PROGRAM AND HEALTH—MRS. C. E. HOLDERBY, Newport News.

FINANCE—MRS. PAUL PEARSON, Aylett.

PUBLIC RELATIONS—MRS. HENRY A. HORNTAL, Alexandria.

HYGEIA—MRS. H. A. SPITLER, Middleburg.

REVISIONS—MRS. J. WALKER JACKSON, Machipongo.

PRESS AND PUBLICITY—MRS. HENRY M. SNEAD, Petersburg.

HISTORIAN, ARCHIVES AND RESEARCH—MRS. WILLIAM LETT HARRIS, Norfolk.

EXHIBIT—MRS. J. L. DECORMIS, Accomac.

JANE TODD CRAWFORD MEMORIAL—MRS. HAWES CAMPBELL, Venter.

LEIGH-HODGES-WRIGHT MEMORIAL BED—MRS. FLETCHER J. WRIGHT, Petersburg.

CANCER CONTROL—Mrs. Albert G. Horton, Norfolk.

BULLETIN—Mrs. F. D. Wilson, Norfolk.

LEGISLATION—Mrs. P. M. Chichester, Richmond.

MEMBERSHIP—Mrs. W. Clyde West, Alexandria.

Appoint Your Publicity Chairman!

As press and publicity chairman for the new year, I am urging that every county auxiliary president appoint her publicity chairman at once to report the new officers, activities, and plans for the coming year. I feel that this is very important in achieving our goal this new year. Our new president is solely dependent on her county auxiliaries and their programs. I am so very anxious to help you pass on your new ideas and to stimulate interest in small groups that really need help.

All members of our organization are laboring for the same results: advancement in health problems; assistance to all groups with that aim in view; and above all education of the public along those lines. Sanitation and defense work are constantly with us and may we help our new president carry out her plans for a banner year! The field is much larger on account of war conditions and I am urging that every member read carefully reports in the MONTHLY for new ideas and in that way help broaden our activities for the coming year.

MRS. H. M. SNEAD,

Chairman, Press and Publicity.

Norfolk Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society held its annual meeting on October 13, with the President, Mrs. Albert G. Horton, presiding. Annual reports from officers and committee chairmen were read.

It was announced that the Norfolk Auxiliary won the State prize of five dollars for the best exhibit at the annual meeting held at Virginia Beach. Mrs. William Lett Harris, delegate, gave an interesting report of this meeting.

The Parliamentarian, Mrs. C. C. Smith, installed the new officers (a list of whom was published in the June MONTHLY), and Mrs. Horton presented the gavel to the new president, Mrs. Walter P. Adams. Mrs. Adams announced her committee chairmen for the coming year and the meeting was adjourned.

RUTH PENDLETON HARRISON WILSON,

Publicity Chairman.

Accomac-Northampton Auxiliary.

The Woman's Auxiliary to the Accomac-Northampton Medical Societies held its regular quarterly meeting at the home of Mrs. John B. Mears, Keller, on October 14, with eighteen members and one guest present. The meeting was opened by the president, Mrs. J. L. DeCormis, who gave an account of the State meeting at Virginia Beach. The yearly reports of the various committee chairmen were given, and new officers for 1942 were elected as follows: President, Mrs. E. Holland Trower, Eastville; vice-president and president-elect, Mrs. O. R. Fletcher, Sanford; secretary, Mrs. E. W. P. Downing, Franktown; and treasurer, Mrs. Wm. L. Cosby, Painter.

The annual Christmas gift to the Northampton-Accomac Memorial Hospital was decided upon and a check for linen has been mailed to them.

An auction of food for general funds was held, after which a delightful social hour was enjoyed.

The following physicians' wives were present: Mrs. S. K. Ames, Mrs. R. J. White, Mrs. W. B. Trower, Mrs. J. W. Jackson, Mrs. J. M. Lynch, Mrs. G. W. Holland, Mrs. W. J. Sturgis, Mrs. John W. Robertson, Mrs. J. L. DeCormis, Mrs. E. W. P. Downing, Mrs. Wm. L. Cosby, Mrs. B. N. Mears, Mrs. J. Fred Edmonds, Mrs. H. L. Denoon, Jr., Mrs. W. C. Henderson, Mrs. John B. Mears, Mrs. S. S. Kellam, and Mrs. E. H. Trower.

CATHERINE R. TROWER,

Chairman, Press and Publicity.

Petersburg Auxiliary.

Since October, 1940, the Petersburg Auxiliary has been active in many ways trying to raise money to aid many projects. Some of these are: working in the cancer drive and contributing \$2.50; participating in the infantile paralysis drive; helping the Red Cross and Bundles for Britain; contributing \$36.50 for the Leigh-Hodges-Wright Memorial Bed; contributing \$5.00 for State maintenance fund; signing a pledge of \$900.00 to be raised over a period of three years to equip a modern nursery in the new hospital—\$200.00 has been paid and \$350.00 is due in January; the annual linen shower in February for the Hospital realized about \$300.00 in linens and blankets. Two Bingo games realized \$90.00 and a rummage sale in December and April netted \$155.20. Another rummage sale is being arranged. An agency for an excellent household cleaner and selling a useful article have both netted good returns.

New officers of the Auxiliary are: Mrs. Munford Yates, president; Mrs. H. M. Snead, president-elect; Mrs. Hilmar Schmidt, recording secretary; and Mrs. E. J. Nixon, corresponding secretary.

MRS. E. L. MCGILL, *President*.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Shock Treatment in Psychiatry. A Manual. By LUCIE JESSNER, M.D., Ph.D., Resident Psychiatrist, Baldpate, Georgetown, Mass.; Graduate Assistant in Psychiatry, Massachusetts General Hospital; etc. And V. GERARD RYAN, M.D., Associate Psychiatrist, Elmerest Manor, Portland, Conn.; Assistant in Psychiatry, Harvard Medical School. Introduction by Harry C. Solomon, M.D., Clinical Professor of Psychiatry, Harvard Medical School; Chief of Therapeutic Research, Boston Psychopathic Hospital. New York. Grune & Stratton, Inc. 1941. xv-149 pages. Cloth. Price \$3.50.

William Henry Welch. And The Heroic Age of American Medicine. By SIMON FLEXNER and JAMES THOMAS FLEXNER. 1941. New York. The Viking Press. Octavo of x-539 pages. Cloth. Price \$3.75.

Synopsis of the Preparation and Aftercare of Surgical Patients. By HUGH C. ILGENFRITZ, A.B., M.D., Instructor in Surgery, Louisiana State University School of Medicine. And RAWLEY M. PENICK, Jr., Ph.B., M.D., F.A.C.S., Professor of Clinical Surgery, Louisiana State University School of Medicine. With Foreword by Urban Maes, M.D., D.Sc., F.A.C.S., Professor of Surgery and Director of the Department, Louisiana State University School of Medicine. St. Louis. The C. V. Mosby Company. 1941. 532 pages. Cloth. Price \$5.00.

The Art and Science of Nutrition. A Textbook on the Theory and Application of Nutrition. By ESTELLE E. HAWLEY, Ph.D., and GRACE CARDEN, B.S., The University of Rochester, School of Medicine and Dentistry, Rochester, N. Y. St. Louis. The C. V. Mosby Company. 1941. 619 pages. With 140 illustrations including 12 in color. Cloth. Price \$3.50

L. Emmett Holt. Pioneer of a Children's Century. By R. L. DUFFUS and L. EMMETT HOLT, JR. Foreword by Edwards A. Park, M.D., Professor of Pediatrics, Johns Hopkins University. D. Appleton-Century Company. New York. 1940. xiv-295 pages. Illustrated. Cloth. Price \$3.00.

Cancer of the Face and Mouth. Diagnosis, Treatment, Surgical Repair. By VILRAY P. BLAIR, M.D., SHERWOOD MOORE, M.D., and LOUIS T. BYARS, M.D., St. Louis. The C. V. Mosby Com-

pany. St. Louis. 1941. 599 pages. Illustrated. Cloth. Price \$10.00.

New and Nonofficial Remedies, 1941, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1941. Cloth. Price, *post paid*, \$1.50. Pp. 691-LXX Chicago: American Medical Association, 1941.

New and Nonofficial Remedies is the book in which are described the medicinal preparations found by the Council on Pharmacy and Chemistry to be acceptable for the use of physicians. The book is cumulative; each year there are added the descriptions of products accepted during the foregoing year. Those taken off the market or found no longer worthy of continued acceptance are deleted. The book is at that time also revised to bring it up to date with the most recent medical thought. Until recent years the additions and deletions have about balanced. Recently, however, the bulk of the book has been increasing and this year's volume represents the largest book of the more than thirty volumes that have been issued.

This year's new additions include the new sulfanilamide derivative, sulfathiazole, as well as sulfapyridine sodium; antipneumococcal rabbit serum of types I, II, III, V, VII and VIII; human convalescent measles serum and human convalescent scarlet fever serum; and staphylococcus antitoxin. The field of endocrinology is represented by the addition of chorionic gonadotropin (follutein). The addition of shark liver oil reflects the search for new sources of vitamins A and D caused by the cutting off of foreign cod liver oil. Other newly accepted preparations are ampules of camphor, digilanid and magnesium trisilicate.

The most extensive revision is represented by the rearrangement and amplification of the chapter, Serums and Vaccines. This chapter is now prefaced by a helpful index, an innovation in N. N. R. The chapter, Vitamins and Vitamin Preparations for Therapeutic and Prophylactic Use has been revised to keep it abreast of the newer developments in this field. Here, too, we find something of an innovation in the systematic use of graphic chemical formulas. It is understood that this practice will be extended to other parts of the book in future editions. Careful perusal will reveal minor revisions in many parts of the book made in the interest of greater clarity and in the effort to keep the book thoroughly up to date.

The Care of The Aged. (Geriatrics) By MALFORD W. THEWLIS, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, R. I.; etc. Third Edition. Entirely Rewritten. St. Louis. The C. V. Mosby Company. 1941. Octavo of 579 pages. With 50 illustrations. Cloth. Price \$6.00.

The reviewer began the reading of this book with much enthusiasm for he has a keen interest in the problems of geriatrics. It must be admitted that there are in the book many useful data, but the organization of these data is very loose and there are many statements made which are not in keeping with established principles. To illustrate, on Page 223 under the head of "Arterial Degenerative Disease, Pathology", there appears the following statement: "The arteries and capillaries contain deposits of lime salts and fatty matter. . . ." As far as I know, no pathologist has ever demonstrated such changes in the capillaries of the human body. On Page 383 under the head of "Hyperthyroidism" the statement is made that "the basal metabolic rate may be normal". These are merely isolated errors, but the fact that such errors appear throughout the book very greatly lessens its value.

The author has attempted what does not seem to be justified in a book dealing with geriatrics. He has discussed diseases which exist from the time of childhood up to those characteristic of the aged. To the reviewer it would seem much more desirable for him to confine himself more intently to those diseases peculiar to the aged and the abnormal reaction of the aged to disease, than to attempt such an encyclopedic casual review of so many diseases rarely, if ever, encountered in geriatrics.

It must be admitted that the book is a disappointment, nevertheless, it is a useful volume for there is a good deal of information included in it and, besides, the bibliography following each chapter is very useful.

W. B. P.

Plague On Us. By GEDDES SMITH. New York The Commonwealth Fund. 1941. Octavo of 365 pages. Cloth. Price \$3.00.

This book is different. One wonders why some books are written, and wonders still more why they are published. This is not true of *Plague On Us*.

Written by a self-professed layman who heads an

important medical and health foundation and who has had unusual opportunities to associate with the leaders of medical and health thought in the country, it is done unusually well. It handles a subject of both scientific and popular interest in an attractive way to both scientists and laymen. It holds the interest of the reader by telling how epidemics have been run down by trained investigators. It also tells of observing practitioners of medicine who were able to work out the epidemiology of certain diseases long before the germs causing those diseases were discovered.

Every physician in active practice and all upper-classmen in medical schools would find it profitable as well as entertaining reading.

The Scientific Book Club selected *Plague On Us* as the principal selection for February.

F. J. W.

Proctology For The General Practitioner. By FREDERICK C. SMITH, M. D., M. Sc. (Med.), F. A. P. S., Formerly Associate in Proctology, Graduate School of Medicine, University of Pennsylvania; Editor, the Weekly Roster and Medical Digest, Philadelphia County Medical Society; Editor, The Medical World; etc. Second Revised Edition. Philadelphia. F. A. Davis Company. 1941. Octavo of xxx-466 pages. Cloth. Price \$4.50.

This book is not only an excellent one for the general practitioner, but also one that should be on the shelf of every surgeon and specialist who has any rectal or proctological practice. In addition to covering this subject completely, it discusses several allied subjects, which, although not strictly proctological, are certainly most acceptable in this type of book.

The table of contents is quite elaborate, and studying this affords a good synopsis on proctology.

The one possible adverse criticism is that in some instances many different methods or prescriptions are given without any definite indication as to which is considered to be the best. This tends to confuse the reader and leaves him with no concrete idea as to the treatment of choice. Personal preferences and experiences by the author are often most helpful to the reader.

The volume is profusely illustrated, and the illustrations are well selected, but many of the half-tones are poorly reproduced.

G. W. H.

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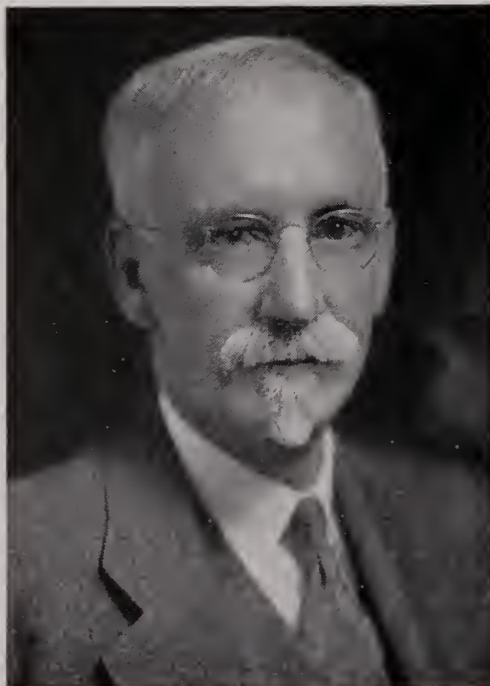
Editorials

The President—Medical Society of Virginia.

IN the matter of getting learning the student may acquire some knowledge from the teacher and the teacher may come to know his students, but the surest part of the whole process is that the students will know the teacher. Even as a young teacher of medicine Dr. Miller was impressive. Of distinguished appearance, immaculately attired, there was a soundness in his work and a gentle courtesy in his bearing which commanded the immediate respect and liking of those who sat on the hard benches in front of him. All that, of course, was the outcropping of heredity and early environment.

Roshier Welsh Miller was born January 31, 1870, in Washington, D. C., the son of John Isaac and Martha Smoker Miller. His early education was obtained in the public schools, at Quaker Academy in Newtown, Pennsylvania, and at Shorlidges Academy, of Media, in the

same State. He attended the Philadelphia College of Pharmacy and Science, where he had also private tutoring in physics, mathematics, and economics. In 1894 young Roshier Miller came to Richmond and entered the University College of Medicine. A year later he graduated from the School of Pharmacy and, in 1897, from the School of Medicine.



ROSHIER WELSH MILLER, M.D.

When Dr. Miller had graduated he began to teach and, though still young, he was no novice when he addressed the classes sitting on those hard benches a decade later. In the course of his work with the University College he taught Pharmacy, Chemistry, and Nervous and Mental Disease. After the amalgamation he was at times pressed again into the service of the Pharmacy School in addition to that of the Medical School, and he is now Professor of Materia Medica and Applied Therapeutics in the Medical College of Virginia. These

are things which can be set down by title but, without specification, the knowing will understand the greater demand upon his energies in the faithful attendance upon a large general practice, a demand which never in all his career has he been willing to subordinate to other interests.

To this busy man there was another side, a very practical side, which came out after the fire that destroyed the University College's main building, in 1910. When the ashes were cleared away and the plans for a new building were ready, to Dr. Miller was delegated the job of supervision and consultation with the builders. He did it with the efficiency that marked his professional work. The same thing happened when the home of the Richmond Academy of Medicine was erected. And it is anybody's guess how many more of the public structures which mark the city's growth have had the benefit of his common sense. For a new demand was yet to be made upon his talents.

During the years he labored at his practice another structure, not of brick and mortar, was building. An enlarging circle of his fellow citizens came to acquire a confidence in the sound judgment and in the zealous public spirit of this doctor of medicine. As a result, in 1920, he became a member of the Richmond City School Board, and in 1928 was elected Chairman of that organization, another office he still holds.

Old interests were never submerged by widening responsibilities. Three times he was elected president of the Alumni Association of the Medical College of Virginia. In 1936 he was made president of the Richmond Academy of Medicine. In whatever organization he enlisted, if there was to be appointed a committee requiring both wisdom and tact, Dr. Miller was liable to be named as a member, for to a remarkable degree he has the capacity to work honestly and fearlessly without exciting needless antagonism. Of this sort of thing he has done much for the Medical Society of Virginia. He has done it as he has done other things, quietly, without ostentation, somewhat in the manner of the building of Solomon's temple, where there was neither hammer nor ax nor any tool of iron heard in the house, while it was in building.

As seen by one of those old students of his the characteristics thus briefly sketched make up in essence the quality which the Medical Society of Virginia has recognized in Roshier W. Miller. And in making him its president the membership has confirmed the estimate of his fellow townsmen. It has fittingly bestowed upon him the highest honor Virginia doctors can bestow.

J. H. SMITH.

Three Bears

THREE little bears—not papa, mama and baby bear, but three brother bears—have recently taken up their abode in the courtyard of the hospital of the Medical College of Virginia. For their presence there we have to thank their creator, a well known sculptor of Cambridge, Massachusetts: Anna Hyatt Huntington.

The bears were not placed before the hospital portals to test the faith of those who would enter, as were the lions before the gates of the Palace called Beautiful in *Pilgrim's Progress*. They are not that kind of bear. They were put there to entertain and please us—perhaps to remind us of a few things that *ursus americanus* has meant to *homo sapiens* during a long co-existence on this hemisphere. Man has hunted the bear, baited him, trained him for sport, killed him for ornaments, clothes and food. He has even worshipped him.

Human beings have always turned to a power outside themselves when they were in trouble. Primitive man turned to the supernatural. Sickness was one of his greatest troubles and one of the least understood. Its origin mystified him. He believed it was imposed from without and that it represented the invasion of the body by malevolent spirits. The animal world about him seemed to him a logical source of these spirits. Naturally certain animals came to be regarded as possessed of powers beyond his reach and comprehension. He deified and worshipped them. In some such way as this the apotheosis of the cow and the serpent came about. By ritual, divination, incantation and exorcism, primitive man tried to bend and direct this spirit world to his own use.

In the Egyptian pantheon the cow-headed goddess, Hathor, was believed to feed infants and cure sterility in women; the cat-headed Ubastet was the goddess of obstetrics, while lion-headed Sekhmet was

the bone-setter and therapist. Among the Greeks and Romans, the snake was the sacred animal of healing. Our present use of the serpent as a symbol of medicine owes its origin to this belief among those ancient but important contributors to the development of our science.

The aborigines in America venerated the bear. He was the beast-god of healing. His bile or blood, when drunk, and his heart, when eaten, made men bold and intrepid. His liver was regarded as good medicine for many ills. His flesh, when consumed in sufficient quantities, was capable of removing the stigma of sterility. No less eminent an authority than the Virginian, William Byrd, II, testified to this.

The bear's more important role, however, was in the use made of him by the medicine man. Clothed in a bearskin, and uttering cries imitative of the bear, the shaman danced about the sick in wild and protracted excitement. By this method the medicine man sought to identify himself with the bear, to create the atmosphere in which the bear would come to heal. In such a mood the medicine man saw, as in a crystal, the hidden nature of the sickness with which he dealt and learned how to expel the evil spirit that was responsible for it. In the mythology of the American Indian, especially as it relates to sickness and its cure, the bear ranks first. Opechancanough, Powhatan and Pocahontas would not have to be told why three bears are brought to a Virginia hospital to be enshrined.

Through the years to come many troubled people—some sick, some friends and relatives of the sick—are destined to pass the threshold of the new hospital of the Medical College of Virginia. Very few of them will know the legends of the bear, but any one of them who stops long enough to catch the spirit of those three playful little Bruins will be grateful. Their mood is at once a tonic, and an antidote to the fear, anxiety and sorrow so apt to plague those whom circumstances send daily through the gates of the hospital.

Pay-Your-Doctor Week

FROM California where many innovations have had their origin comes notice of the planned observance of the fourth annual Pay-Your-Doctor-Week, November 2-8. It is a movement said to be entirely ethical because it is sponsored by the banks of the state. It should enlist public support, say its sponsors, who announce that loan funds are available to those who have yielded to the widespread tendency "to let the doctor wait" until other bills have been settled. "The plight of the country doctor who is often paid with farm products, or a share in next year's crops, has been widely publicized in recent years," it is stated, "while little has been said about the city doctor whose reward for services rendered all too frequently consist of long hours of practice and vague promises of payment sometime in the future."

We wonder how such a plan would thrive in conservative Virginia. At any rate it is music in the profession's ears to know that again a few bouquets are being handed out in kind words to "the members of the healing profession who quietly but relentlessly continue the battle against disease and sickness, particularly at this time when much of the world is engaged in destroying rather than preserving life." For a long time it has seemed to us that the publicity the doctor was getting in the press was often far from sympathetic, and he has felt rather lucky to be allowed to pursue his calling without the drastic changes that were indicated when a certain red cat jumped out of President Roosevelt's bag sometime ago. The war and Uncle Sam's need of organized medicine have given us, at least for the time being, a breathing spell.

Bringing the War Home to the Medical Profession

AS our country approaches nearer and nearer the verge of war, we listen with keen attention to an address such as that delivered by Colonel N. T. Kirk, Commanding Officer of the Walter Reed Hospital, at the Virginia Beach Meeting of the Medical Society of Virginia. Colonel Kirk's address was factual. He showed that the total of the medical personnel of the present armed forces of the United States—130,000—was as large as the whole army several years ago. He stated that 10,500 physicians were needed under the present set-up. The army seems to have secured them. Nearly as many nurses are needed, but this quota is far from filled. A discouraging feature of the army nursing situation is that 40 per cent of nurses fail to re-enlist at the expiration of their term of service. There has long been a recognized shortage of civilian nurses. Something, apparently, has got to be done about the nursing situation.

Colonel Kirk's references to medical students and the army were significant. He stated that in the future students after their second year in medicine would be commissioned second lieutenants in the army and upon graduation would automatically pass to the next higher rank. He did not refer to what appears to us an equally vital question, namely, the question of pre-medical students and the army. Are they to be taken from college or are they to be placed in a deferred class? It seems to us vitally important that the future doctors of the country while still in the period of academic preparation for medicine even now should be given some assurance of the government's intentions to encourage them in their plans to carry through the task they have begun. How else will the future supply of doctors essential in both civilian and army life be guaranteed?

Department of Clinical and Medical Education of the Medical Society of Virginia

University of Virginia Fall Clinic.

The twenty-eighth Postgraduate Clinic given by the University of Virginia Department of Medicine in conjunction with the Department of Clinical and Medical Education of the Medical Society of Virginia will be held November 14-15, 1941, in Charlottesville.

This session will be a symposium on Gastro-Enterology presented by six invited guests of eminence in their respective fields. The diseases of the esophagus will be covered by Dr. Porter P. Vinson, who has written a recent monograph on the subject of his address. Dr. Julian M. Ruffin, who will discuss certain aspects of gastroscopy and colitis, has written several articles on these subjects and has had a wide clinical experience with the use of both the gastroscope and proctoscope. Dr. Chester M. Jones is the A.O.A. guest speaker and has been a frequent contributor to gastro-enterologic literature. He is perhaps best known for his monograph on "Digestive Tract Pain". Dr. T. T. Mackie, a national authority on nutrition, has had a particular interest in the problems of nutrition in gastro-intestinal diseases. The relationship of allergy and the digestive tract will be considered by Dr. Warren Vaughan, the distinguished allergist. Dr. William Osler Abbott has contributed theoretically and prac-

tically by his investigations of the G.I. tract with the Abbott-Miller tube.

The complete program follows:

FRIDAY

- | | |
|-------------|---|
| 10:30-11:30 | DISEASES OF THE ESOPHAGUS
Dr. Porter P. Vinson, Richmond, Va. |
| 11:30-12:30 | THE PRESENT STATUS OF GASTROSCOPY
Dr. Julian Ruffin, Durham, N. C. |
| 12:30- 1:30 | THE CLINICAL SIGNIFICANCE OF "GASTRITIS"
Dr. Chester Jones, Boston, Mass. |
| 1:30- 2:30 | LUNCH |
| 2:30- 3:30 | DEFICIENCY STATES AND THE G. I. TRACT
Dr. T. T. Mackie, New York, N. Y. |
| 3:30- 4:30 | DIAGNOSIS AND TREATMENT OF AMEBIC DYSENTERY AND CHRONIC IDIOPATHIC ULCERATIVE COLITIS
Dr. Julian Ruffin, Durham, N. C. |
| 8:00 P. M. | THE INFLUENCE OF THE NERVOUS SYSTEM ON DIGESTIVE TRACT SYMPTOMS
Dr. Chester Jones, Boston, Mass. |

SATURDAY

- | | |
|-------------|--|
| 10:00-11:00 | GASTRO-INTESTINAL MANIFESTATIONS OF ALLERGY
Dr. Warren Vaughan, Richmond, Va. |
| 11:00-12:00 | INTESTINAL INTUBATION
Dr. Grier Miller, Philadelphia, Pa. |
| 12:00- 1:00 | DRUGS AND THE G. I. TRACT
Dr. William Osler Abbott, Philadelphia, Pa. |
| 2:30 P. M. | VIRGINIA-LEHIGH FOOTBALL GAME |

Proceedings of Societies

The Southwestern Virginia Medical Society

Held its annual fall meeting in Roanoke on September 25, with the president, Dr. T. K. McKee of Saltville presiding. There was an attendance of about 130 physicians.

At the afternoon session, papers were presented by Dr. E. G. Gill on Laryngectomy (illustrated with motion pictures); Dr. J. V. Gunter on The Pathology of Vitamin Deficiency Diseases; Dr. David S. Garner on Life Insurance Medicine; and Drs. Charles H. Peterson, Allan Barker and Charles Smith on Roentgen Treatment of Cutaneous Epitheliomas. All speakers are of Roanoke.

Following dinner, Dr. T. M. McKee read a paper on Medical Ethics, and Dr. Irvine H. Page, Director of the Lilly Laboratory for Clinical Research, Indianapolis, spoke on The Nature and Treatment of Hypertension.

New officers were elected as follows: President, Dr. W. C. Caudill, Pearisburg; vice-president, Dr. James P. King, Radford; and secretary-treasurer, Dr. David B. Stuart, Roanoke. Drs. T. K. McKee, Saltville, and A. P. Jones, Roanoke, were named members of the executive committee, the other members being Drs. J. G. Cox and W. A. Porter of Hillsville.

Northampton County Medical Society.

Dr. Oscar Swineford of the Department of Medicine of the University of Virginia Hospital was chief speaker at a meeting of the Northampton County Medical Society at their regular quarterly meeting at Eastville on October 13. Dr. Swineford spoke on "Asthma and Heart Disease". Nineteen doctors were present. Dr. John Robertson of Onancock, Dr. Rooker White of Keller, and Drs. Hanson, Bishop, Rademaker, and Fields of Salisbury, Md., were among the visitors to the local Society.

W. C. HENDERSON, *Secretary*.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held October 13, at 8:00 P. M., at Lynchburg General

Hospital, with the president, Dr. Powell Dillard, presiding.

Dr. George Craddock and Dr. J. G. Jantz were elected to membership.

Dr. Allen Barker, Roanoke, presented an illustrated lecture on "The Roentgenological Diagnosis of Gastro-intestinal Hemorrhages". This excellent paper was thoroughly enjoyed and generally discussed by the members present.

C. E. KEEFER, *Secretary*.

Patrick Henry Medical Society.

The regular quarterly meeting of this Society was held at the Henry Hotel, Martinsville, October 3 at 7:00 P. M., at which time a paper on Barbiturate Poisoning was given by Drs. R. H. Walker and F. B. Teague.

Mr. L. O. Key, executive director of the Hospital Service Association of Roanoke, spoke on the work of that Association.

R. H. WALKER, *Secretary*.

Tazewell County Medical Society.

At the September meeting of this Society in Tazewell, Dr. Charles T. St. Clair of Bluefield, W. Va., presented a paper "About Sinuses". This being the annual meeting, the following officers were elected: President, Dr. Rufus Brittain, Jewel Ridge; vice-president, Dr. Henry C. Davis, Bluefield; and secretary-treasurer, Dr. Mary Elizabeth Johnston (re-elected), Tazewell.

Richmond Academy of Medicine.

At the regular meeting of the Academy on October 14, the following program was presented: Congenital Heart Disease with Autopsy Findings by Dr. Wellford C. Reed; A Typical Pain Referred from the Upper Urinary Tract by Dr. T. B. Washington; and Chronic Arthritis by Dr. Elam C. Toone, Jr.

Norfolk County Medical Society.

Dr. H. Page Mauck, Richmond, was the guest speaker before the Norfolk County Medical Society at its meeting on October 13th. His subject was Injuries About the Knee Joint.

News

The Virginia Beach Meeting, Medical Society of Virginia,

October 6-8, was most enjoyable and also interesting from a scientific viewpoint and sessions were well attended. Four hundred and thirty-one doctors registered and many of these were accompanied by their wives. The weather was "against us," the heat being most unseasonable and unreasonable, but at least it gave everyone something to talk about and afforded many an opportunity to enjoy surf bathing. Exhibits, scientific and commercial, were excellent. Several groups of specialists held luncheon or dinner meetings and panel discussions on the last afternoon held the attention of many. At the banquet on the last evening, the golf prizes were awarded, Dr. M. S. Fitchett of Norfolk winning the prize for low gross score, Dr. B. A. Doggett of Norfolk that for low net, and Dr. C. W. Eley, also of Norfolk, for low putting. A floor show followed in the ballroom, with Jim MacWilliams of radio fame as master of ceremonies. Music and dancing specialties featured this with Giovanni, the "world's greatest pick-pocket", taking the star part.

There was a good attendance at the business sessions, minutes of which will appear in the December issue of the MONTHLY, as also the membership of committees as named by the president. An invitation from the Roanoke Academy of Medicine was accepted to hold the 1942 meeting in their city. Dr. Roshier W. Miller of Richmond succeeded Dr. Walter B. Martin of Norfolk as president, and Dr. J. M. Emmett of Clifton Forge was named president-elect. Vice-presidents this year are: Dr. James W. Anderson of Norfolk, Dr. Ernest G. Scott of Lynchburg, and Dr. James P. Williams of Richlands. All councilors from the odd numbered districts were re-elected so that there will be no change in that body. Delegates to the American Medical Association are Dr. Walter B. Martin of Norfolk and Dr. Carrington Williams of Richmond, their alternates being Dr. Roshier W. Miller and Dr. J. M. Emmett.

The Virginia Beach meeting is a happy memory; the Roanoke meeting will soon be a reality. Start thinking of and preparing to attend it.

Virginia Radiological Society.

The annual meeting of this society was held at the Cavalier Hotel, Virginia Beach, October 7, with

a large percentage of members present. The following officers were re-elected: President, Dr. Wright Clarkson, Petersburg; vice-president, Dr. Clayton Eley, Norfolk; and secretary-treasurer, Dr. C. H. Peterson, Roanoke.

The society sponsored a round table discussion by Dr. W. Osler Abbott of Philadelphia and Dr. George W. Chamberlin of Reading, Pennsylvania, who spoke on the use of the Miller-Abbott tube.

Virginia Urological Society.

The eighth annual meeting of this Society was held during the meeting of the Medical Society of Virginia at the Cavalier Hotel, Virginia Beach, on October 7. Following the annual dinner a program of case reports from the membership was enjoyed.

The following officers were elected to serve during the coming year: President, Dr. Linwood D. Keyser, Roanoke; vice-president, Dr. B. E. Harrell, Norfolk; and secretary-treasurer, Dr. W. W. Koontz, Lynchburg.

The Virginia Pediatric Society

Held its annual luncheon meeting at Virginia Beach on October 8. At that time the following officers were elected for 1941-1942: President, Dr. W. L. Harris of Norfolk; vice-president, Dr. Leta J. White of Petersburg; and secretary-treasurer, Dr. Edwin A. Harper of Lynchburg.

A Panel Discussion was held that afternoon, with Dr. Edwin A. Harper as chairman. Others appointed to take part in the discussions were: Drs. J. M. Bishop, Basil B. Jones, Charles P. Mangum and F. D. Wilson.

The Virginia Obstetrical and Gynecological Society

Had a group luncheon at the Cavalier Hotel, Virginia Beach, October 8, with Dr. James R. Miller of Hartford, Conn., as their guest. Eighteen members were present.

The luncheon was followed by a business meeting at which Dr. Edmund M. Ellerson of Staunton, Dr. J. M. Habel, Jr., of Suffolk, Dr. James Parrish of Portsmouth, Dr. Spotswood Robins and Dr. Edwin Rucker of Richmond were elected to active membership. Dr. James R. Miller of Hartford, Conn., guest of the State Society, was elected to honorary membership.

The revised Constitution and By-laws were voted upon and adopted. The essential change was the abolition of associate membership. It was agreed that active members could invite guests for the annual spring travel trip by writing the secretary of the Society and having the secretary extend the proposed guest an invitation.

The officers of the Society for the coming year were elected as follows: President, Dr. A. M. Groseclose of Roanoke; vice-president, Dr. H. C. Spalding of Richmond; and secretary-treasurer, Dr. W. C. Winn of Richmond.

Following the business meeting, a panel composed of Dr. C. J. Andrews, chairman; Dr. Bayard Carter, Dr. James R. Miller, Dr. Waverly R. Payne, and Dr. H. H. Ware, Jr., answered questions which had been submitted. Many problems of interest to the general practitioner, as well as to the obstetrician or gynecologist, were discussed.

Southern Medical Association.

Everything is in readiness for the thirty-fifth annual meeting of this Association in St. Louis on November 10-13, and every attending physician is promised much of interest. The clinical sessions begin on the afternoon of the 10th, lasting until the next day at noon, and the nineteen section meetings are from Tuesday noon until Thursday, the closing day. There will be an unusually large number of scientific exhibits, as well as several hobby exhibits.

If you have not made your reservations, write at once to Dr. J. Hoy Sanford, Chairman, 910 Syndicate Trust Building, St. Louis, Missouri.

Married.

Dr. McLemore Birdsong of Charlottesville and Miss Charlotte Clark Spain of Petersburg and Charlottesville, October 18. Dr. Birdsong recently returned after taking special work in Boston and is now associated with the department of pediatrics at the University of Virginia.

Dr. Charles Fleetwood James, Fortress Monroe, and Miss Elizabeth Lavonia Scott of Tallahassee, Fla., and New York, September 21.

Mr. Thomas C. Wood and Dr. Amelia Ester Gardner, class of '40, Medical College of Virginia, and now senior interne at the Medical College of Virginia Hospitals, Richmond, September 20.

Dr. Wiley Lewis Forman, Columbus, Ohio, and Dr. Elizabeth Virden Barnes of Ivy, September 20.

Dr. Barnes received her medical degree from the University of Virginia in 1938 and interned at Cleveland City Hospital, Cleveland, Ohio. They are now located in Columbus.

Dr. Arthur Broadus Gravatt, class of '41, Medical College of Virginia, and Miss Ruth Bailey Latham of Richmond, October 4. Dr. Broadus is now interning at Marine Hospital, Norfolk.

Dr. Warren T. Vaughan,

Richmond, early in October delivered the convocation address at the opening of the University of Michigan Medical School at Ann Arbor—the school of which his father, the late Dr. Victor C. Vaughan, was for many years dean. At the convocation exercises, Dr. Vaughan was awarded an honorary degree of Master of Science.

News From the Medical College of Virginia.

Dr. Sidney S. Negus, professor of chemistry, attended the Fifteenth Anniversary celebration of the University of Chicago.

Dr. William B. Porter, professor of medicine, has been re-elected a visiting professor on the faculty of the University of Puerto Rico.

Dr. Harry Walker, associate professor of medicine, has been elected to membership in the American Clinical and Climatological Association.

Dr. Lee E. Sutton, Jr., professor of pediatrics, attended the annual meeting of the American Academy of Pediatrics in Boston.

A group of three bears, in stone, by Mrs. Anna Hyatt Huntington, has been received; the setting in the courtyard of the new hospital has almost been completed. This group is the gift to the college of Mrs. Huntington and her husband, Mr. A. M. Huntington. Funds for the landscape treatment were provided by an anonymous friend of the institution.

The college acted as host to the Association of American Medical Colleges, October 27-29, and this was an outstanding occasion. The group can, necessarily, meet but once in a generation in one place and the college and Richmond were very proud to have the association for this meeting.

Alumni of the school of medicine held a well-attended dinner at the Cavalier Hotel during the recent meeting of the Medical Society of Virginia. Dr. T. Dewey Davis, president of the alumni asso-

ciation, presided. Dr. P. St.L. Moncure, who had made local arrangements most acceptably, assisted with the meeting and spoke briefly. Other speakers were Dr. W. L. Harris, member of the Board of Visitors of the college; Dr. Roshier W. Miller, member of the faculty, and President W. T. Sanger.

Alumni of the school of medicine of the Washington, D. C., chapter met October 3 at The Mayflower. Dr. C. C. Coleman, professor of neurological surgery, addressed the group at a luncheon meeting. President W. T. Sanger also attended the meeting and spoke briefly.

Dr. J. M. Northington of Charlotte, North Carolina, represented the college at the inauguration of Dr. John R. Cunningham as president of Davidson College, Davidson, North Carolina, October 16-17.

Dr. Julian L. Rawls.

At the recent meeting of the American Association for the Study of Neoplastic Diseases, held in Washington, D. C., Dr. Rawls of Norfolk was elected president for the ensuing year.

Dr. George C. Snead,

Who has practiced for sometime at Clinchco, has just moved to Radford, where he will be engaged in general practice. His offices are in the Radford Hardware Building.

The Jefferson Medical College of Philadelphia.

The 117th Annual Session of the College was inaugurated September 17, 1941, with Mr. Robert P. Hooper, president of the Board of Trustees, presiding. The Introductory Lecture was delivered by Dr. Martin E. Rehfuss, Professor of Clinical Medicine, his subject being "The Medical Student of Today". Dr. William Harvey Perkins, the seventeenth Dean of The Jefferson Medical College of Philadelphia, was presented to the students and friends of the college by Dr. Randle C. Rosenberger, Professor of Bacteriology and Immunology. Announcement was also made of the appointment of Dr. Perkins as Professor of Preventive Medicine.

The total enrollment is 537. Of this number, 154 are new students, 141 admissions to the First-Year Class, and 13 admissions to the Third-Year Class. The members of the First-Year Class were prepared for medical study in sixty-six different institutions, all having completed four years of college work and received a bachelor's degree before being admitted to the medical course. Geographically, twenty-nine

states and two insular possessions are represented, as follows: Alabama, California, Connecticut, Delaware, Idaho, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Washington, West Virginia, Hawaii, and Puerto Rico. -

Wanted—Copy of the Original Seal of the Society.

At the meeting of the Medical Society of Virginia in 1873, the Society adopted the seal of the original organization. It was stated that "Besides an appropriate device, it bears the inscription *Sigillum Societatis Medicae Virginiae*, which makes it in every way adapted to the wants of this Society." As the State Society has recently decided to claim organization from 1820, it seems appropriate that the seal used at that time should now be in the possession of this office. If, among your files or books, you have a copy of this seal or know where a copy could be obtained, please communicate with the Secretary's office at 1200 East Clay Street, Richmond.

Dr. John H. Bonner,

For the past two years health officer of the Shenandoah-Page-Warren Health District, has located in Elizabeth City, N. C., where he will be engaged in general practice, with special attention to diseases of the chest. His office is in the Carolina Building.

Spring Graduate Course.

The sixteenth annual Spring Graduate Course in Ophthalmology and Otolaryngology will be given at the Gill Memorial Eye, Ear and Throat Hospital, Roanoke, from April 6 to 11, 1942. Among the guest speakers will be the following:

- Dr. George E. Shambaugh, Jr., Chicago.
- Dr. George M. Coates, Philadelphia.
- Dr. Norton Canfield, New Haven.
- Dr. W. E. Grove, Milwaukee.
- Dr. Edwin N. Broyles, Baltimore.
- Dr. Warren Davis, Philadelphia.
- Dr. John R. Richardson, Boston.
- Dr. B. Y. Alvis, St. Louis.
- Dr. Harvey E. Thorpe, Pittsburgh.
- Dr. Wendell L. Hughes, New York.
- Dr. Earl L. Burky, Baltimore.
- Dr. Edmund B. Spaeth, Philadelphia.
- Dr. E. B. Dunphy, Boston.

American Public Health Association.

At the annual meeting of the Association, the middle of October, Dr. John L. Rice of New York City succeeded Dr. W. S. Leathers of Nashville, Tenn., as president, and Dr. Allen W. Freeman of Johns Hopkins University, Baltimore, a former Virginian, was named president-elect. Dr. I. C. Riggins, State Health Commissioner of Virginia, was chosen as one of the four new councilors. It was decided to hold the 1942 convention in St. Louis.

Dr. Charles F. James,

Class of '38, Medical College of Virginia, recently on the resident staff at Coney Island Hospital, Brooklyn, N. Y., has been ordered to military duty and is now connected with Station Hospital at Fortress Monroe, Va.

Van Meter Prize Award.

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held at Atlanta, Georgia, June 1, 2 and 3, 1942, provided essays of sufficient merit are presented in competition. The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten, double spaced copy sent to the Corresponding Secretary, Dr. T. C. Davison, 478 Peachtree Street, Atlanta, Georgia, not later than April 1.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association.

Defense Councils.

According to a joint statement issued by the U. S. Director of the Office of Civilian Defense, F. H. LaGuardia, and the Chairman of the American National Red Cross, Norman H. Davis, State and local defense councils are the official agencies responsible for the coordination of all available resources which may be required for civilian protection in the event of belligerent action. Defense Councils should therefore acquaint themselves with the resources of the local Red Cross Chapters in providing food, cloth-

ing, shelter, nursing care, transportation, and other basic necessities and should integrate them into the comprehensive local program. Duplication of trained and experienced personnel and of available supplies of the Red Cross should be avoided except where supplementation is essential to meet the anticipated needs of the community.

Dr. J. D. Kernodle

Resigned as associate in pathology at the Medical College of Virginia, on September 1, to accept the position as director of the Clinical Laboratory at the Wichita Falls Clinic-Hospital, Wichita Falls, Texas.

Dr. Noland M. Canter,

Harrisonburg, was the guest speaker in the first convocation of the current session of Randolph-Macon College, his topic being "Mending Men".

Military News.

The following have been added to the list of

Examining Physicians on Local Boards

Dr. Martin L. Cannon, Lorton.
Dr. Charles R. Duncan, Radford.
Dr. David S. Garner, Roanoke.
Dr. Robert R. Nelson (Col.), Charlottesville.
Dr. Roy G. Parks, Temperanceville.
Dr. Joseph E. Seebert, Lexington.
Dr. Robert Snead, Radford.
Dr. Aubrey S. Willacy (Col.), Arlington.

Medical Advisory Board Member

Dr. E. L. Flanagan, Richmond.

Medical Reserve Officers

The following additional medical reserve corps officers have been ordered to extended active duty by the War Department, Washington, D. C.:

Lt. Charles Fleetwood James, Jr., Appomattox—Fort Monroe.

Lt. Edward Albert Mitchell, Clinchco—Camp Lee.

Lt. Clyde Garvice O'Brien, Appomattox—Fort Story.

For Sale—

Allison nose and throat treatment cabinet, examining table and cuspidor. American metal treatment chair and stool—walnut finish. All in good condition; used very little. Also floor lamps, twentieth century eye cabinet and irrigation can holder. Address: Frederick G. Fox, Lt. Comdr. M.C., U.S.N.R., 1323 LaFayette Boulevard, Norfolk, Va. 47191.

For Sale—

Short wave diatherm. First class condition. Price reasonable. Apply to No. 175, care the MONTHLY. (*Adv.*)

For Sale—

Instruments and other office equipment of doctor recently deceased. Will sacrifice for quick sale. Address "Equipment," care VIRGINIA MEDICAL MONTHLY.

Obituary Record

Dr. Jesse Martin Shackelford,

A former councilor and vice-president of the Medical Society of Virginia, died on October the 2nd, following a paralytic stroke two days previously. He was a native of Henry County and seventy-two years of age. Upon graduation from the former Baltimore Medical College in 1891, he returned to Virginia, and a few years later located in Martinsville. He helped to found the first hospital in Martinsville, which was burned, following which he established the one bearing his name, with which his son has been connected for several years. Dr. Shackelford was surgeon with the Norfolk and Western and the Southern railways and held membership in a number of medical organizations. He is survived by his wife and a son, Dr. John A. Shackelford of Martinsville, by a former marriage.

Resolutions of Sympathy and Esteem on Dr. Shackelford.

"Leaves have their time to fall.

And Flowers to wither at the North winds breath
But thou hast all seasons for thine own—Oh Death".

WHEREAS the Eternal God, who never errs, has in His wisdom, called from the scene of his earthly labors, the spirit of our friend, Dr. Jesse M. Shackelford, whose death occurred October 2nd, 1941, and

WHEREAS it now becomes our melancholy task to lay a wreath of affection and esteem upon the tomb of a friend; a fellow-worker, and a Christian gentleman; one who into the web of life wove a personal character that was courteous, kind-hearted and hospitable; and a public character that was positive and unafraid in its convictions, but chivalrously respectable to others;

THEREFORE BE IT RESOLVED by Patrick Henry Medical Society:

First, To express its deepest and most intense sorrow over the death of Doctor Shackelford, who during his

affiliation with our society, and his longer service in the community, always upheld the highest and best traditions of our profession; to tender its condolence to the members of the family of the deceased, and to share the genuine grief of the whole community;

Second, That a copy of this resolution, be sent to the members of the family; to the Medical Society of Virginia; to the *Martinsville Daily Bulletin*, and a copy be spread upon the minutes of our Society.

PATRICK HENRY MEDICAL SOCIETY.

Dr. Isaac Peirce,

Prominent physician of Tazewell and for many years a regular attendant upon the meetings of the Medical Society of Virginia, died September the 18th, after a short illness. Dr. Peirce was seventy-seven years of age and a graduate of Jefferson Medical College, Philadelphia, in 1886. He located in Tazewell in 1888 and had since taken an active part in the professional and civic life of that section. He was a charter member of his county medical society and for many years its secretary. Three children survive him, and a number of relatives, including a brother, Dr. D. E. Peirce of Rose Hill.

Dr. Joseph Frank Slade,

Well known physician of Sussex, died October 14, after an illness of more than a year. He was a native of Prince George County and seventy-nine years of age. Dr. Slade graduated from the Bellevue Hospital Medical College in 1888 and had practiced in Sussex for the past fifty years. He had been a member of the Medical Society of Virginia for forty-seven years. Two sons survive him.

Dr. Thomas Franklin Dodd,

Well known physician of Northern Virginia, died at his home in Alexandria, August 14. He was 62 years of age and a graduate of the Medical College of Virginia in 1908. Dr. Dodd saw service during the World War and was for many years connected with the Veterans Administration. He had been a member of the Medical Society of Virginia for thirty-two years.

Dr. Jacob Adam Wagner

Of Bland, died October 15 after an illness of several months. He was eighty years old and a graduate of the Medical College of Virginia in 1901. Dr. Wagner had been superintendent of the Bland County Schools for the past twenty-four years and was prominent in many other civic affairs. He was formerly a member of the Medical Society of Virginia. Two daughters survive him.

Dr. James Henry Smoot

Died at his home in Woodstock on September 25. He was seventy-four years of age and received his medical degree from the University of Maryland in 1892. Dr. Smoot was active in civic affairs, for several years a director of the Shenandoah County Bank and Trust Company, and was formerly a member of the Medical Society of Virginia. His daughter and two sisters survive him.

Dr. Dean DeWitt Lewis,

Professor emeritus of surgery at Johns Hopkins Medical School and formerly surgeon-in-chief of the hospital, died at his home in Baltimore on October 9, having been in poor health for some time. He was widely known and was a former president of the American Medical Association.

Dr. John Randolph Tucker Carmichael,

Charlottesville, died August 29, at the age of 29. He was a graduate of the Medical Department of the University of Virginia in 1936, and was a first lieutenant in the Army with headquarters at Ft. George G. Meade, Md., at the time of his death.

Dr. John Woodrow Barnhart,

Clendenin, W. Va., died of cerebral hemorrhage, August 18. He was 28 years of age and a graduate of the Medical College of Virginia in 1939. Dr. Barnhart was a first lieutenant in the Army stationed at Fort Hayes, Ohio.

In Memoriam to Thomas D. Jones, M.D.

After an illness of several months our friend and colleague Dr. Thomas D. Jones died on June 12, 1941. His death was the occasion for a feeling of real loss in the community and of a profound sorrow among his many friends. The confidence and trust he had inspired in those who knew him constitute a fitting memorial to a really fine man.

Dr. Jones graduated in medicine at the Medical College of Virginia in 1906 and after two years' internship at Richmond City Home Hospital and New York Post-Graduate Hospital, he entered general practice and built up a large clientele. This achieve-

ment probably satisfied him for a while but his ambition to progress and his love for children finally drove him to give up his practice and devote two years to post-graduate work in Pediatrics in New York and Boston.

When he returned to Richmond he limited his practice almost entirely to children and soon established a sound reputation as a Pediatrician.

In the course of his professional life he received many honors from his colleagues. Among these honors may be mentioned such offices as president of the Richmond Academy of Medicine, president of both the Richmond Pediatric Society and the Virginia Pediatric Society and first vice-president of the Medical Society of Virginia. He was a licentiate of the American Board of Pediatrics and a fellow of the American Academy of Pediatrics. At the time of his death he was an Associate Professor of Pediatrics at the Medical College of Virginia. He was a member of the Phi Beta Pi fraternity, the Manchester Medical Society, the Caduceus Club and a frequent attendant at various hospital staff meetings.

Despite the demands of his large practice and other professional obligations, Dr. Jones always seemed able to find the time and energy to respond to the many calls from civic and religious groups which asked his advice and counsel. His kindness, availability, and wisdom were more or less taken for granted during his life and their real value probably was not truly appreciated until death brought a clearer realization of their worth.

The Richmond Pediatric Society realizing with sorrow the loss of a valued member and wishing to make a formal record of this realization, therefore hereby resolves:

1. That a copy of this brief record be entered in the permanent minutes of the Society.

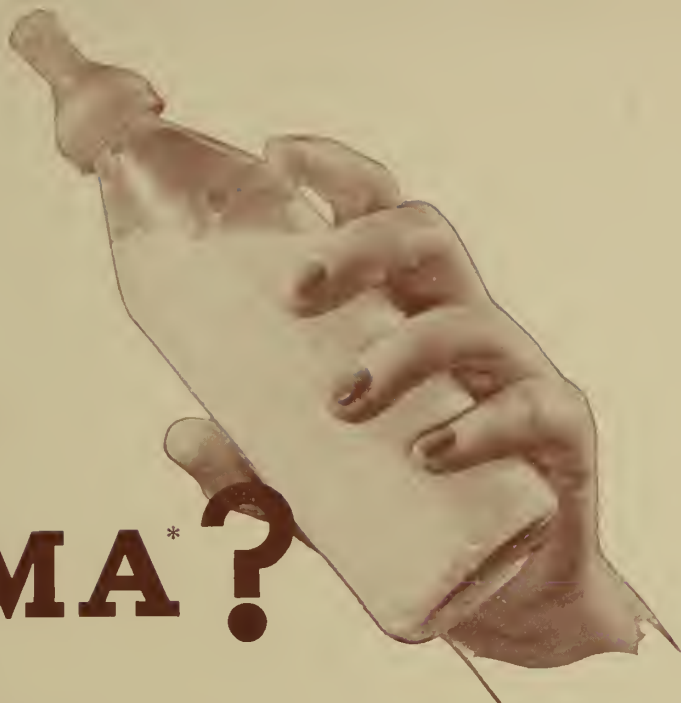
2. That a copy be sent to the bereaved family of our late friend, Thomas D. Jones, as a testimonial of our regard and sympathy.

HENRY S. STERN, M.D.

HOWARD URBACH, M.D.

BASIL B. JONES, M.D., *Chairman.*

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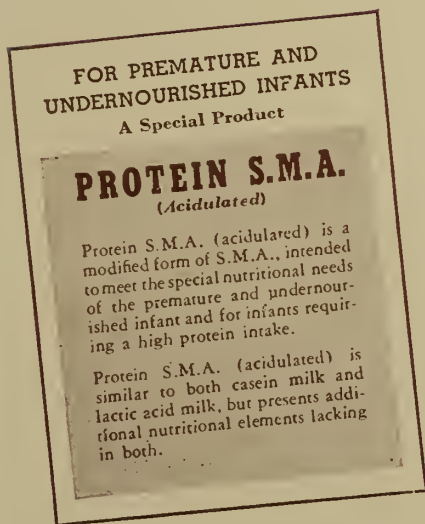
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**Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942**



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RICHMOND, VA., DECEMBER, 1941

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Guest Editorial

Medical Writing

INCREASING organization in the field of medicine, as in every other field of human endeavor, has introduced advancement in the production of contributions to medical literature. Far too often, however, there are still physicians who prepare their contributions with a striving and agony and delay quite comparable to the delivery of the human progeny by some one quite untutored in the possible refinements associated with that performance. Many a time the physician who has been asked to prepare a simple statement, constituting a review of available knowledge, for a local medical society, fails to inform himself concerning the innumerable agencies prepared to assist him in that simple task. He is likely to seat himself in his office or in his den at home, to surround himself with a liberal quantity of textbooks of more or less recent vintage and with periodicals selected at random, and then endeavor to collate this material in a single evening so that it may ultimately resemble something of usefulness to the physicians on whom it will be inflicted. The first information that this physician should possess is the importance of the preparation of a systematic, orderly scientific outline as the first step in the preparation of a manuscript on any subject. Even the elementary courses in English composition now teach the significance of having an introduction, a body, summary and conclusion to any type of scientific essay.

Fundamental in the preparation of the manuscript on any scientific subject is a knowledge of the contributions already made to that subject by previous contributors. Now available to the physician is the best series of bibliographic references available in any field of human endeavor. The Index Catalogue of the Surgeon-General's Library, the Index Medicus, and the Quarterly Cumulative Index Medicus and, indeed, even the semi-annual indexes in *The Journal of the American Medical Association*, offer for every physician easily available guides to the most recent contributions on any medical subject. The simplest process is to place each bibliographic reference on a card or a sheet of paper, following the form prescribed for bibliographic references by leading medical publications; under this bibliographic reference should be placed a brief abstract or summary of the article concerned. The physician may then systematize the presentation of this material by classifying his cards under the classical headings developed by Sir William Osler in his textbook on "The Principles and Practice of Medicine," such as *history, etiology, diagnosis, symptoms, prophylaxis, prognosis, and treatment*, or he may choose to assemble his references in chronologic order. Thus, obviously, it merely becomes necessary to insert this material in the proper place in the outline of the presentation that he will make.

Professional writers in every field of literature have come to realize the importance of preparation of a manuscript for the publication to which it is meant to be sent. Some periodicals limit themselves to articles of 1,500 words; some periodicals are capable of handling large monographic presentations. *The Journal of the American Medical Association*, for instance, endeavors to limit practically all scientific contributions to six pages or not more than 6,000 words (preferably articles are much shorter). In the instance of special articles prepared for a specific purpose much greater latitude prevails. Obviously the physician who is preparing an article for a state medical journal, for one of the periodicals devoted to a medical specialty,

or for any other medical periodical should be familiar with the nature of the publication and should plan his article according to the usual plan followed by the editor of that publication.

Many a medical writer has expressed the view that such limitations as are here mentioned interfere seriously with proper display of the individuality of the literary contributor. Actually one may utilize his literary accomplishments and style to far better advantage under some such orderly plan than when the writer gives free rein to his imagination and writes as the spirit moves him. One of my most respected teachers once said that the outward appearance of a manuscript, the character of its arrangement, the quality of its spelling and punctuation and choice of diction were excellent indications of the personal characteristics and scientific qualifications of the writer. The clinician or the research worker in the laboratory betrays in his literary contributions the possession or lack of ownership of a scientific mind.

Competition in the field of medical writing is certainly as great as that in the field of medical practice. The leading medical publications are constantly overwhelmed with offers of material. Many of the periodicals devoted to medical specialties find it necessary to hold manuscripts from six months to a year or more before space can be found for their publication. *The Journal of the American Medical Association* receives five times as many manuscripts as can be given room in its pages. Therefore, the physician who launches into the arena a literary venture poorly clad, unsound in its constitution, limping in some of its sections, bruised by bad grammar, inadequately camouflaged in its obvious deficiencies, may expect to have his progeny returned with the simple but trite statement, "The editor regrets . . ."

MORRIS FISHBEIN.

EMOTIONAL MALADJUSTMENTS FROM UNPLANNED PARENTHOOD*

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The Emotional Maladjustments from Unplanned Parenthood are of necessity the maladjustments of both parent and child. The implications of this title are that: (1) Some emotional maladjustments are preventable; (2) They may be caused wholly or in part by lack of planning for parenthood; (3) Adequate planning may be an effective means of preventing these disorders.

The work of a psychiatrist consists largely in the treatment of what are popularly known as "nerve cases", "nervous breakdowns", "behavior problems" or some form of emotional maladjustment which may be expressed as an anxiety state or some other form of unhappiness. He finds an amazing number of cases, the principal cause of which is to be found in the wrong treatment of the patient in childhood by his parents. The White House Conference reported (1930), "In early childhood—even as early as 4 years of age—about one-third of apparently normal children of self-sustaining families, average

in intelligence, have behavior problems sufficiently marked to necessitate treatment. To be sure, behavior problems do not by any means indicate future insanity, but by far the greater number of functional disorders are first evidenced by apparently minor disturbances in childhood."

Studies made by Popenoe, Weeks, Terman and others indicate that the marital happiness or unhappiness of parents of one generation tends to carry over into the second generation both in special studies and in controls. (Example given by Popenoe, of marriages of 2,635 young couples from happy homes 67 per cent turned out happily; 1,621 of marriages from unhappy homes 43 per cent turned out happily.)

It is evident that home is where children develop their tastes, beliefs, sense of property rights, sense of responsibility for self and others, diction, attitudes toward sex, marriage and parenthood itself, with, of course, modifications by outside influences, such as school, church, mores of group, etc.

Flugel, in "The Psychoanalytic Study of the Fam-

*Delivered at the Annual Conference of the Virginia League for Planned Parenthood, at Richmond, Va., September 26, 1941.

ily", emphasizes that family love in early years is necessary for individual development and happiness. He urges that "every child should be born in such conditions as to make it possible and likely that he will receive such measure of care and affection as he stands in need of. The unwanted child—the child who for social, psychological or economic reasons is not welcomed by his parents—starts life under a disadvantage in this respect, a disadvantage that may sometimes lead to the most serious consequences both to himself and to society".

Ever since Freud first propounded his theory of the traumatic basis of the neuroses and set forth the vital significance of the first few years of life, the relation of parent and child has been accepted as one of the fundamental determinants of personality traits, and this has been confirmed by cumulative evidence in child guidance and other mental hygiene clinics throughout the world.

Time was when few if any parents admitted that children were ever unwanted. Regardless of parental illness, poverty or lack of opportunity, a child once born was supposed to be adored, cherished, provided for. By the grace of God this actually did happen, perhaps more often than not, but there is also good evidence in history and biography that the unwanted child is not a problem new to our age.

Planned parenthood does not necessarily run counter to the teachings of any church, and some parents may plan for large families, while others feel that they could do better by a smaller number.

In our clinical experience unwanted children may be any of the following: (1) No child wanted—in other words, one or both parents may not wish any child or may not want child at this particular time; (2) Parents wish a boy, and a girl comes; consequently, the girl is unwanted; (3) They wish a girl and a boy comes, so the boy is unwanted. As a result in group 1 the parents either consciously or unconsciously attempt to punish the child either overtly or by guilt over-protection. In the second group they try to change the girl to a boy, and in the third group the boy to a girl. Many examples could be given of disastrous results.

The child who is wanted by his parents, and grows up in a home atmosphere that is characterized by understanding and affection, loving care, and protection, has a better chance to develop into a well-balanced, emotionally stable adult than the unwanted child.

The unwanted or rejected child is destined on the average to show strong aggressive traits, to be hostile and antagonistic towards those with whom he must have dealings, and to develop tendencies which may lead to delinquency or other forms of crystallized unhappiness. But over-submissive behavior or neuroses are also reaction patterns of the rejected child.

J. K. Folsom in "The Family" lists four categories of "bad parents": (1) Over-love and over-control; typical of the over-protective parents who dominate; (2) Over-love with under-control where the child is spoiled and babied; (3) Under-love with over-control; (4) Under-love with under-control. He further states, "Domineering over-protection yields submissive and effeminate behavior."

Newell claims that the most important cause of a mother's rejection of a child is her own unhappy adjustment to marriage. Among other causes may be the phobia of impregnation which can actually result in anxiety neuroses. Both the cause and the result yield to treatment.

Dr. Hannah M. Stone stated that fifty-one out of seventy-one cases of wives studied at the Maternal Health Center at Newark, N. J., had anxiety neuroses, twenty had some other psychiatric condition, and one was mentally deficient. It seems that in the cases of anxiety neuroses the underlying cause was an intense fear of pregnancy, which in its turn was based upon a variety of physical and psychological factors. It is particularly significant that the physician of the Mental Hygiene Clinic was of the opinion that the practice of "improper methods of contraception, particularly of coitus interruptus was the underlying cause of the neurotic condition of some of the husbands of these wives," and, consequently, advised the wives to apply to the Maternal Health Center for a more satisfactory method of birth control. Dr. Stone said, "In a recent analysis of 2,000 cases we found that nearly two-thirds of the patients had been employing coitus interruptus for varying periods of time. From a study of the histories of our mental hygiene cases it would seem that these factors may apparently initiate some definite psychoneuroses, especially in cases where a certain instability of the nervous system already exists."

"The follow-up reports would also indicate that sound and reliable contraceptive advice may become a valuable therapeutic measure in the management of these cases. The question, therefore, arises

whether the freer dissemination of adequate contraceptive information would not prevent the onset of certain mental maladjustments and psychopathologies." A program for planned parenthood may be considered one of the measures for furthering the progress of mental hygiene.

Getting back to the question of rejection as evidenced by unwilling mothers or *unwilling fathers*, it may be shown openly despite the disapproval of society. It is frequently encountered when the baby is not planned for but it is also seen at other times. It is evidenced by the fact that the young mother turns away from her newborn babe and refuses to nurse it, neglects to keep it clean or to train it adequately in basic habits. She punishes it severely and refuses to play with it. She lets her time be taken up by things outside the home; is indifferent to the child's illnesses; hates to touch or caress it; is not interested in its education; may become jealous of the child if it is a girl, and nag it if it is a son.

In many instances the birth of an unwelcome child is proclaimed as such. As for example, the mother who says "I just can't stand to touch the child. I never wanted it anyway." Sometimes the father rejects the child when it seems to have occasioned the death of the mother, and this persists for many years.

Newell studied cases of seventy-five children where there was "a definite statement by the mother that the birth of the child was unwelcome." Newell's conclusions after contrasting these children with a control group of eighty-two children are as follows:

"The rejection is primarily due to the mother's unhappy adjustment to marriage. This in turn is usually a result of immaturity and emotional instability on the part of one or both parents. The mother's handling is most frequently inconsistent, wavering between over-protective and hostile behavior."

The children in turn, according to Newell, showed a "mixture of aggressive, antisocial, as well as submissive, neurotic symptoms. In addition, it was found that aggressive behavior occurred more frequently when the parental handling was consistently hostile, while submissive behavior occurred more frequently when the parental handling was consistently protective."

MacDonald has recently reported on some seriously and criminally aggressive boys who behaved like perfect gentlemen in the presence of women,

but who, when with men and boys, manifested attacking behavior. They were hostile to their own sex. It seems that these boys were rejected by their fathers who deserted them and left them to be raised by mothers who also rejected them and had to become the aggressive bread winners of the family in the absence of the fathers. Many times in such cases the chief causes for difficulties with the child are the mother's or father's own unsolved emotional problems. There is cumulative evidence in child guidance and other mental hygiene clinics that all sorts of emotional maladjustments and behavior deviations can be accounted for by inter-personal relationships in the home. As a result, the clinical approach to personality problems and to the delinquencies of the children has to take into consideration the less obvious causes in order to evaluate the whole situation.

A less obvious form of rejection is disguised and appears as over-protection. This may allow the mother to express her hatreds against the child and at the same time compensate as a penance so as to appease her guilt feelings. Such a mother broods constantly over a child, cannot bear to have it out of her sight, and lives forever in the fear that some evil will befall it. Even though she may be an intelligent woman she may fear that the child is not bright mentally when there is no evidence to this effect.

Dr. R. A. Jefferson, in the *Wisconsin Medical Journal*, February, 1939, gives as predisposing factors in cases of mothers who reject their children: (1) Childhood experience in which she herself was rejected by her own parents; (2) Childhood experiences which gave rise to marked jealousy, rivalry, antagonism between herself and siblings; and (3) Marked incompatibility on one score or another between herself and her husband—the father of her children. The third and last factor noted is actually an almost universal finding, but one is not to infer, therefore, that it is a universal cause. There are far too many instances when, in spite of marital difficulties, there is no element of rejection. One can only include marital disharmony as more often contributory than causative, and in all probability one or both of the other two factors must as a rule be operative if the rejection mechanism is to become significantly manifest. Jefferson states further, "Social agencies find that about 75 or 80 per cent of their wards are rejected by their parents." (He advocates that pre-

natal education of the mother must be utilized as an effective measure of preventing destructive attitudes).

Aichorn, in "Wayward Youth," says of delinquent children: "Most of these young people have never had their infantile need for affection satisfied. They have never experienced the happiness of a close relationship to the mother. They need love."

Twenty-five or thirty years ago it was thought that possibly 50 per cent of mental disease might be prevented by adequate mental hygiene programs. Now we are not so sure that there are techniques available to prevent mental disease on so considerable a scale. However, no state or community has ever responded with financial support sufficient to carry out *fully* any of the mental hygiene programs suggested. There is another aspect to the problem of prevention, and that is, most well informed people are convinced that children whose parents are wisely counselled as to responsible parenthood and as to child guidance have more chance for a happy childhood and reach adult life with a better chance for a happy adjustment than those who have not received this attention. When it comes to prevention, we do not always know just what we are preventing, but, if we have in mind an ideal of the sort of family in which children can best be raised, it might help us to formulate certain plans of prevention. Judge Miriam Van Water's definition of "the biologically healthy family" is one where the father is dominant, but not cruel or mean. The mother is a satisfied woman. Both parents genuinely love and enjoy their children, will seek to understand them, will have respect for their unfolding personalities."

Lorine Pruette said, "The healthy home permits the creation of the personality of all its members and its psychological health is based upon three aspects: (1) The emergence of the child as an individual; (2) The mother as a person; and of (3) *The father as a parent.*" If we accept these definitions, then we must come to the conclusion that the homes from which many of our clinic children come are not healthy homes. Fortunately, however, there are families in which factors such as the sociological set-up and the physical health, intellectual attainments, emotional stability of the parents, are favorable to the mother's health and to the development of the baby and its siblings. We all know families in which the intellectual attainments might not be considered high, families in which there is little of

worldly goods—not many of the things that spell material security,—and yet they are hard to surpass as training places for children. Such families are an essential part of the American pattern today. A study is being made of these and other homes. What appears to be a good study plan is being carried out by Dr. Margaret E. Fries. This begins with both parents before the child is born; moving pictures are taken. Charts and detailed records are among the data which Dr. Fries plans to collect on these children. This will cover infancy, childhood and adolescence. She tells of ways of detecting the attitude of rejecting mothers, which have already appeared in the pictures, the way the nursing mother holds the child, references to the baby as "it", etc.

Dr. Groves made this statement: "No other human enterprise would have anything like the success marriage has if it were handled so carelessly and with so little science."

Into such a careless home was born Jane. The family history was negative for mental and nervous diseases. Parents married early and did not plan for children. Patient came when unwanted. The father, who was a traveling salesman, had always insisted that his wife travel with him and they traveled together with their baby until the child was of school age. They used to keep her in a dresser drawer and suitcase. Jane's parents were immature in their emotional development. The child was referred to the clinic because of poor group adjustment, was stubborn and difficult to manage. She spent much time in day dreaming and other retreats from reality. She was aware that her parents did not want her, that they had not planned for her coming because they talked about it openly. She resented this and showed it in her behavior. Her fundamental need for security, chance to grow, concrete ideals to grow toward and the companionship of her contemporaries during her developmental years all were neglected. And this in part, at least, because her parents had not planned for her.

Billy was an unwanted child to this extent. Mother had very much wanted a girl and she could not reconcile herself to the boy who came instead. He was first referred to the clinic by the school when he was 9 years old because of a poor group adjustment. Investigation showed that the mother was trying to raise the patient as she might have raised a daughter. He had been forced to wear dresses until school age, and at times thereafter; on

dress-up occasions she would put girl's clothes on him. She had made over a silk evening dress for patient, and had taken special care in trimming all of his under-clothes with lace and ruffles. She was quite set in her ideas and it was difficult to get any cooperation. Seven years later the patient was referred to the clinic by the JC for homosexuality.

Bobby, who was unwanted by the mother and knew little about his father, was in the JC because of a sadistic assault on a small boy. The mother stated that patient annoyed her constantly and that he also annoyed his father. The mother hated to go to his school because she did not want to let his teachers know that she was his mother, so open was her rejection of him.

Ann's mother wanted a boy and when a girl came she tried to raise her as a boy. She dressed her in trousers and encouraged her in all sorts of activities of boys and, when unsupervised companionship with boys finally resulted in sex play, she brought the child to the clinic.

In the cases of mothers of some of these children we found that they had had abortions prior to patient's birth, and in some instances had tried to abort patient. It is a matter of concern that there are so many abortions in the United States. Dr. Parran, of the U. S. Public Health Service, said: "For every 100 women who die in pregnancy and childbirth twenty-four perish from abortion." It is stated in *American Mercury*, August, 1941, that approximately 70 per cent of the half million annual abortions which occur in the U. S. are criminal.

A study by Milbank Memorial Fund stated that "For families on relief in New York there are thirty-six abortions per 100 women, which is a higher percentage than any other group." All of these women with whom we have come in contact in clinic studies have guilt feelings in regard to abortions which have already occurred and in some instances fear that they have caused some injury to the patient because of attempted abortion.

Planned parenthood should include planned courtship—a testing experience. Many marriages are bad marriages and parents are bad parents because of the restricted selection of the individual. While the man picked the best candidate from the women he knew, and she picked the man in her acquaintance who came nearest her ideal, the choice was not a wise one because their contacts were too limited and they had too little awareness of what making a home

and responsible parenthood requires in training and discipline.

Lucy is a product of such a marriage. Here is a list of complaints against her, as cited by the mother: "She is spoiled, sucks her thumb, wets her bed, has nightmares, grits her teeth in her sleep, has food fads, indulges in wanton destructiveness, temper tantrums, quarrels constantly, is jealous, lazy, and engages in sex activities." Lucy knows her parents do not care for each other, and that she is an unwanted child. Her brother is the father's favorite. In revenge, she becomes, because of her unhappiness, as annoying as possible at home. Her goal, which is to be loved by her father, is seemingly impossible. Her mother is not very cooperative. She seems to think that it would be to confess a fault if she even tried to be nice to the child. At school the child makes an excellent adjustment, and herein lies the only hope of helping her.

I have included in this paper the more easily demonstrated emotional maladjustments that are related to unplanned parenthood, such as the obvious patterns of rejection, the anxiety neuroses, the over-aggressive personality, the over-protective and over-protected, the under-protective and the under-protected types. I have cited only such cases as show these more obvious patterns and *may* yield to sound treatment. The same causative factors may result in conflicts less easily diagnosed and less easily treated. The study of clinic files abounds in evidence that responsible thinking in relation to planned parenthood is imperative today.

As a case presenting a more complex pattern and one less susceptible to treatment than those I have mentioned, I call your attention to a curious person who is said to be the most important German poet in the last hundred years. His life is of great interest in the study of genius and abnormal psychology. Rilke was born to parents neither of whom, says his biographer, seems to have been fit to have children at all. For the first five years he was brought up as a little girl, with girl's clothes, curls and dolls. Then he was sent to what was for him the harsh and brutal life of a military academy. He prayed for death, found some relief in writing poetry, left the academy at 16 exhausted in body and damaged in mind, according to his own statements. We can see him in his biography as a "painfully interesting" character: unlucky in birth, unhappy in

childhood, mothered by many women and himself incapable of love.

It is cold comfort to anyone to suggest that documented stories of Adolf Hitler's developmental years and young manhood show the seeds of his tyrannical aggressions. The pattern is obvious as to relative poverty, obscurity, a not robust body, a too close attachment to his mother. There is confusion as to the paternal surname and rejection of his father is suggested. That he and his works were rejected by Vienna Art Circles seems to be true. In him the seeds of frustration and of race hatred have several interpretations.

Men in the field of psychiatry as well as lay people have posed certain historic "ifs" about him which less impassioned history of another day man answer.

Meanwhile, he symbolizes for many a summation of man's destructive energies. Some of us have allowed ourselves to forget that any man anywhere is compounded of potential evil and potential good. (Phrased Biblically, and psychologically phrased as ambivalence of hate and love).

Never again should intelligent men forget these basic paradoxes in themselves and others. In that light the shaping of one man's destiny is fraught with the possibility of retarding the progress of all his fellow men, while another's (Pasteur, Curie, Jenner, Reed, or Osler) may alleviate pain and prolong life for countless men.

Treatment of parents who reject their children is, we find, fundamentally an educational procedure. So the question arises as to whether knowledge of this sort cannot be given through simpler and more widely useful channels. This, I believe, is a part of the program of your organization. You are acting on the principle that society can be strengthened by planned parenthood. You would recommend, to those in whom pregnancy seems ill advised, remedial treatment or medical advice as to birth control. Those who are fit to bear children you would educate to realize the privilege and responsibility of planned parenthood. Such a program should further the progress of positive mental hygiene.

These are days when all men, everywhere, think in terms of a nation's resources—oil, ore, and other raw materials, food, currencies, armaments and man power. One sees over and over again "American Youth is the Country's greatest resource."

If the world is to advance again in peace, states

must keep before the "average man" a concept of the family's value—not as a war resource but as a unit of civilization's growth-potential.

Parents who are fit to bear children and who want children should find the way easier to plan for a family. Should feel more secure as to how their children will fare.

Such goals are apt to be obscured by the imminent clouds of war, but they are goals not one of us should dare lose sight of. They are goals we must keep before our children. Any program of planned parenthood must keep them in mind.

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1001 East Clay Street.

SOME REMARKS ON THE PRINCIPLES OF MEDICAL ETHICS*

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Upon succeeding to the office of President of this Society, I was assailed by mixed emotions of gratitude and of doubt—gratitude to my fellow members who saw fit to place their confidence in me; doubt of my ability to fulfill the obligation of guiding the destinies of so distinguished a group.

My duty was plain. And while “duty” may be the sublimest word in the English language, it may, nevertheless, be the most disturbing. My predecessors had pushed forward, ever forward, despite the vicissitudes of American economics, and each year there was a broadening of the ideals of the organization.

If, in my tenure of office, this Society should fail to progress, should fail to move toward the horizon, my administration would be a failure and my name blacked out of that list of executives who have made the Medical Society of Southwestern Virginia a proud and distinguished organization.

Doubtful as I was of myself, I could do what, perhaps, other Presidents have done. I could refer the difficult problems to that most efficient of medical society secretaries, Dr. King, and know that all would be well. (This is commonly known as “passing the buck”.)

In casting about for a subject upon which to base my remarks tonight, there was no scarcity of material, but a definite obstacle was encountered in attempting to treat the chosen subject in a worthy manner.

So, should I prove unequal to the task, the interesting and instructive program which is to follow will, I am sure, amply compensate for the disappointment incident to my delinquencies, and I shall trust to the generosity of the members of this Society to overlook my many imperfections.

The pioneers in Medicine established a code of ethics, an agreement amongst physicians, which set forth the rules of conduct to be observed by the physician in dealing with his patients and with his fellow practitioner.

These ethics, or rules, differ not from the rule of fair play as applied by the honest layman to his

fellow man. True, the technicalities of the medical profession compel the application of these precepts to more problems, large and small, than are encountered by the trades people, yet the basic principle of fair competition should be the guiding element throughout.

The obligation assumed upon entering the medical profession requires the physician to comport himself as a gentleman, and demands that he use every honorable means to uphold the dignity of his chosen profession, to exalt its ideals, and to extend its sphere of usefulness.

The requisites for medical practice in this State have been raised until, today, Virginia leads the South in medical education. But, despite the attainment of this high standard, the fundamental principles of ethics appear to be woefully neglected.

There is little in the curriculum to prepare the young physician for his contacts with his fellow practitioner. So, once he is immersed in the sea of medical endeavor, he will find that his bathing suit of ethics, as prescribed by the “brass hats” of medical education, is as scant as the modesty of a strip tease dancer. Common sense is his only protection, and his wits may enable him to learn the rules of the game from his professional associates.

It is common knowledge that unpleasant relations frequently exist between members of our profession. This feeling is not confined to the more populous centers, but extends to the small towns and rural districts, where relations are often strained to the breaking point.

Almost without exception, this condition is due to violation of the simple rules of medical ethics. It would appear that the little things, carelessly done, give rise to much of the friction between physicians.

Until medicine becomes an exact science—and it never will—medical men will differ in their opinions on disease and its treatment; and it matters not how brilliant, how skillful, how resourceful we may be, we are often unable to arrive at a satisfactory diagnosis.

We should be slow to emphasize or criticize the mistake of a fellow, for a similar fate always lies in wait for us.

*Presidential Address, delivered before the Southwestern Virginia Medical Society, at Roanoke, September 25, 1941.

It may be the over-worked physician, with busy days and interrupted nights, who has made an egregious error, and we should always bear in mind that it is the man who has the greatest number of patients who makes the most mistakes, for the doctor who never made a mistake never had a patient.

The transfer of a patient from one physician to another should be accompanied by the most rigid exercise of medical ethics. A change by any other means (except by reference) is mentioned only to be condemned. The referred patient should be directed back to the referring physician, and a report mailed at once. The report should not be entrusted to the patient, since it might go astray, or may contain information not intended for him.

The "traveling" patient is a problem familiar to every practitioner. I refer to the patient who goes from doctor to doctor, putting faith in none, and often criticizing one to another. Such patients are always trouble makers, and we would gladly do without them; but these, like the poor, are always with us.

The man who determines how to handle these patients should come forward and reveal his formula to an anxiously waiting profession. Until then, about all that can be done, in dealing with this type, is to advise him to single out one doctor and stick to him.

A practice to be discouraged and condemned is that of silently listening to criticism of a fellow physician by an offended patient, or joining in such criticism. Silence is often taken for agreement, and remarks are sometimes enlarged in the retelling.

All criticism should be countered in such a way as not to offend, but, at the same time, to demonstrate that you are the protector of the reputation of your brother physician.

In rural communities it is difficult to maintain professional secrecy. The best rule is to divulge nothing, except to the immediate family, or to the patient himself. All inquiries from other sources should be answered in polite generalities. If detailed information is given in cases where such commitments can do no harm, reluctance to reply on other occasions may give rise to suspicion and rumor.

The welfare of the patient should be the thought uppermost in the physician's mind; and that which tends to make the position of the patient less secure,

or his recovery less speedy, violates the fundamental principles of medical ethics.

The gratuitous service of the physician should be available to the poor, the unfortunate, and the abandoned. Too often, we are found "busy" when we know beforehand that no compensation awaits our effort.

In these days of relief boards and welfare organizations, we are inclined to forget that the physician owes to society and humanity the use of his service in many cases where his only reward is gratitude and approbation.

A case, once undertaken by the physician, should not be abandoned or neglected because the disease is deemed incurable, or because a lack of funds precludes his remuneration.

Contract practice is ethical when there is no solicitation, when the contract is not obtained by bidding, when there is adequate compensation for proper service to patients, when there is no interference with fair competition in the community, and when the contract contains no provision contrary to sound public policy.

Contract practice is spreading, and it is wise to consider each contract on its merits before binding one's self to discharge its provisions.

Under no circumstances should practice be engaged in for profit, direct or indirect, to any lay group or organization. Nor should a physician bind himself to engage in any type of practice for which he is not fitted.

In the maelstrom of centralized government and bureaucratic powers which exists today, our independence is jeopardized. There is persistent agitation for state medicine, and it behooves us to lay aside our petty jealousies and present a united front, that we may preserve the privilege of shaping our own destiny.

The medical profession of this great nation, moving in unison, can, and must, stem the tide which threatens to blot out the democratic way of life we know and love.

Harmony and accord being so essential, we should follow a simple rule, whereby we may know if our conduct, professional and social, is correct.

Fortunately, this was promulgated for us by the great Physician, who never lost a case, when He laid down the Golden Rule: "Do unto others as you would have them do unto you."

THE MANAGEMENT OF CYSTOCELE AND PROLAPSUS UTERI

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Perhaps uterine prolapse and cystocele represent the oldest need for surgical repair, yet the results have not been as good as those attending surgery in general. So commonly are these two conditions found at the same time in the same patient, that it is usually impossible to say which is the "cart" and which is the "horse." Cystocele can and does occur

not borne children, one being enough, though multiparity is the usual story. Prolapse, except in very old women, cannot occur if the uterus is in an anterior position; therefore, any type of repair must have for its aim the correction of the usually attendant posterior displacement. In very old women with atrophied pelvic organs the importance of an ante-

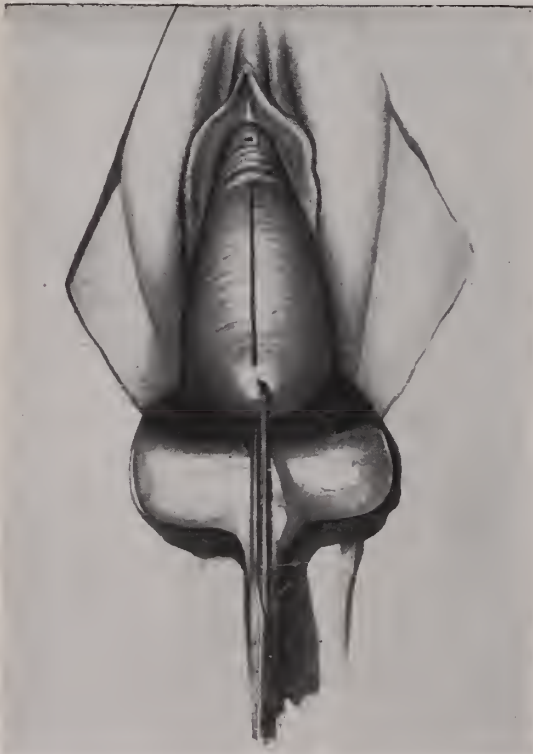


Fig. 1.—Shows a posterior speculum inserted into the vagina and the cervix being drawn through the vulva with a tenaculum. The black line indicates the line of incision.

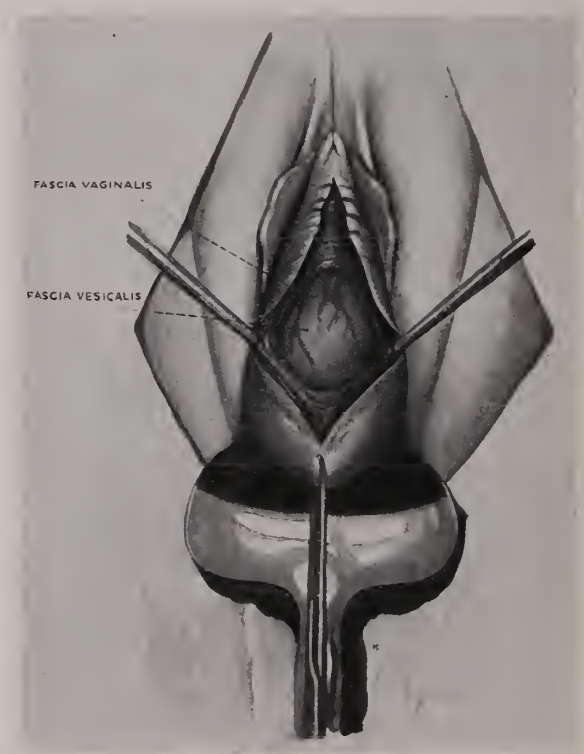


Fig. 2.—The vaginal fascia and vesicle fascia in their respective planes.

without prolapse, and likewise prolapse without cystocele. In the latter type there apparently exists a hole or defect in the vaginal vault but no bladder descensus. Cystocele alone is far more common than prolapse alone. It is the combination of these, however, that is discussed in this paper, together with a modification of an old operation which has given me better results.

The chief cause is child-bearing. Prolapse is seen rarely in nulliparous women, but never has the writer seen cystocele occur in a woman who had

not borne children, one being enough, though multiparity is the usual story. Prolapse, except in very old women, cannot occur if the uterus is in an anterior position; therefore, any type of repair must have for its aim the correction of the usually attendant posterior displacement. In very old women with atrophied pelvic organs the importance of an ante-

rior position of the uterus is considerably lessened and very often the anterior and posterior vaginal repair is all that is necessary. The literature on the subject is glutted with arguments as to what pulls the uterus up in place and what supports it. However, it is of minor importance, practically speaking, which does which, because the basis of all operations now in common use for prolapse is a satisfactory anterior and posterior vaginal repair. This may not be all that is necessary, but if this fails the whole operation is a failure; hence, its importance.



Fig. 3.—A further separation of the fascia.

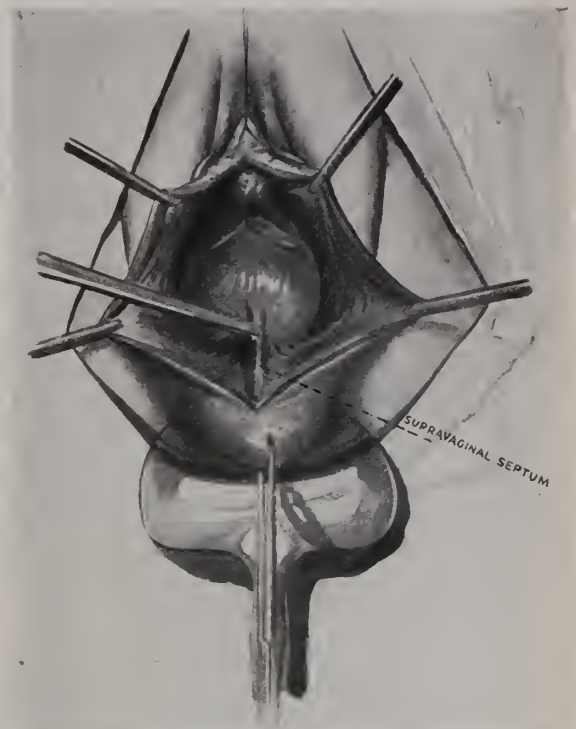


Fig. 5.—The supravaginal septum, which extends to the cervix, is caught ready for division.

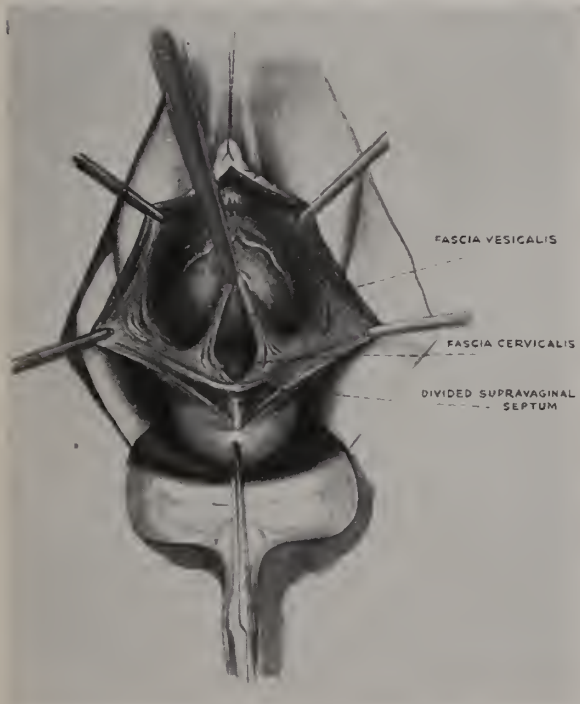


Fig. 4.—A still more advanced step in freeing the bladder.

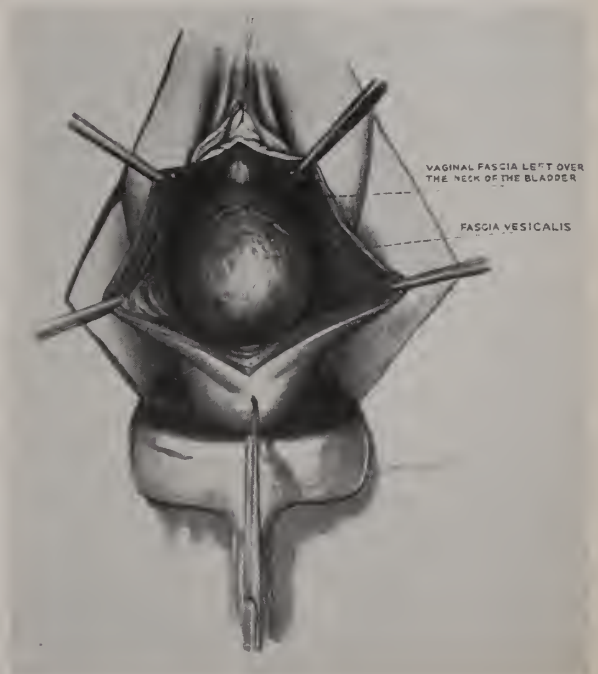


Fig. 6.—The bladder entirely freed so that it can now be replaced in its normal position under the symphysis.

Anterior repair, which consists of elevating the bladder to its original position and sewing the supportive fascia underneath so as to maintain that position and to prevent the sliding of the bladder

downward, gives satisfactory results in most cases. Fixing the bladder or preventing the downward roll-

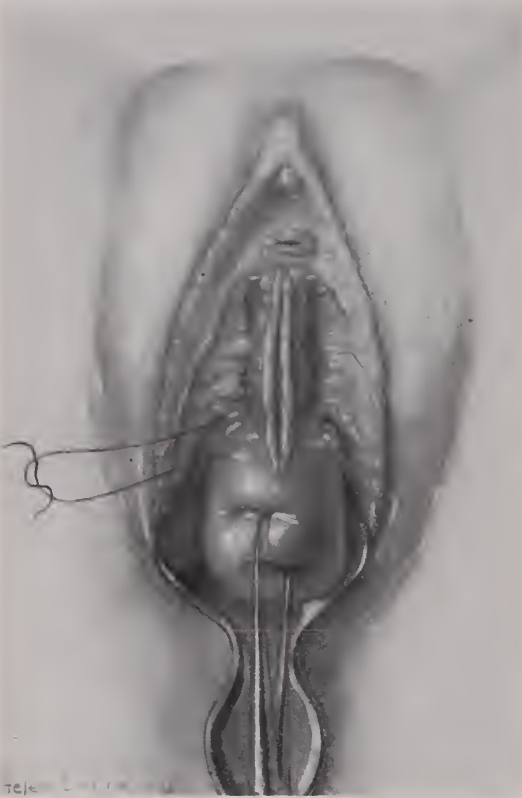


Fig. 7.—Mattress sutures are placed so as to go through and through all the structures between the vaginal mucosa and the bladder, which serves to "lump" the tissues and afford a broader apposing surface.

ing of that organ is the most important step in prolapse repair. By removing a "skid" or "roller," so to speak, the mechanics of prolapse are thus prevented (see illustrations).

One should be careful in discarding that which is old merely because of its age, but until very recent years all manner of operations through the abdomen have been devised for the correction of uterine descensus. Usually the uterus was sewed to the anterior abdominal wall and utero-sacral ligaments shortened, followed by a posterior perineorrhaphy. A sufficient per cent of these operations failed (even if the patient survived the operation) as to make the use of a pessary necessary in a large number of them.

Today there are three accepted methods of dealing with uterine prolapse and cystocele. All three methods have as their basis good anterior and posterior vaginal repair.

First, is the interposition operation, wherein the fundus uteri is brought extraperitoneally and sewn anteriorly in such a manner as to support the blad-

der. If the fundus is too large or too small it is obvious that this method cannot be used. If used, many of these patients will feel as if "something is dropping out". Another objection is that should a dilation and curettement ever become necessary, or carcinoma of the fundus suspected, they could not be dealt with very easily. If a surgeon found a uterus in this position, he would first set about correcting the rather unanatomical situation.

The second method is vaginal hysterectomy. This operation is an old one, more recently stressed as a new one. Though it is a useful procedure, yet, here again, if the fundus is too large or adnexal disease is present, its field of applicability is lessened.

The third method consists of anterior and posterior vaginal repair and suspension of the uterus through the abdomen if desirable. Sterilization is easily affected when the combined procedure is used. The writer does not share the belief that these cases should not be sterilized. Most of them are so bad, their tissues so poor, that a second attempt at repair would not be welcomed. It is a fact, however, that more cases of prolapse after the menopause are seen than before. The earlier in life that repair is attempted the greater will be the chance of cure.

A woman who has not reached the menopause should have a uterine suspension and ligation of tubes unless she is willing to have a Caesarean operation at any future pregnancy. A second attempt at repair requires a great deal of optimism on the part of the operator. The result may be an utter failure in an otherwise successfully repaired case, even when a good obstetrician is in attendance and knew of the previous repair.

Regardless of which pelvic ligaments serve as "guy ropes" and which support the uterus, they have little or nothing to do with any repair, as all attempts fail without a good anterior and posterior vaginal repair. Therefore, the strongest repair possible should be provided, and, of the two, the anterior offers the greatest technical difficulty, but is of greater importance, since it has for its purpose restoration of bladder support—the removal of the wheels (if you please) from under the uterus—thereby lessening the tendency of that organ to slide downward and forward.

MODIFIED OPERATIVE TECHNIQUE

The writer believes that a method of closing the structures of the anterior vaginal wall, which gives

more support to the bladder by causing more scarring, has resulted in a sufficiently high per cent of cures as to make reporting the procedure justifiable.

The bladder is exposed as follows: The cervix is caught in a double-jawed tenaculum and drawn downward. If there is great mobility of the tissues, the anterior vaginal wall is placed on tension by applying a French forcep just below the urethral orifice or by placing a traction suture for counter-traction. Then, through the anterior vaginal wall and its fascia, a median longitudinal incision is made beginning just below the uppermost point of traction and extending downward to the level at which the vagina becomes continuous with the cervix. To avoid injury to the neck of the bladder and urethra, the connective tissue of the vaginal fascia is left over them. If the patient has had difficulty in controlling her bladder, these structures must be re-sutured in order to cure the attendant urethrocele. Next, the vaginal wall and its fascia are caught on each side with forceps and held laterally. The supravaginal septum is then divided with scissors, and the bladder freed by blunt dissection from the vaginal fascia (see illustrations). No attempt is made to separate the thin layer of vaginal fascia from its overlying vaginal mucosa, as it is often too thin and frail to suture as a real supportive aid, in which case an attempt to make a separate suturing layer is actually harmful. Farther, laterally, these structures (the existence of which has been ques-

tioned by some) become fairly dense and, when re-sutured, form a real support to which the bladder wall doubtless adheres very readily. In a long standing case of cystocele these structures seem frail indeed to an occasional operator in this field. They are, however, just as definite, though, of course, smaller, as the all-important levators utilized in a posterior vaginal repair.

This supportive structure is brought anew to its old position by carefully placed interrupted sutures. Then comes the step which, I believe, is not only a new idea but a very important one: namely, the placing of mattress sutures through all the layers between the vaginal mucous membrane and the bladder which is held out of the way. By tying these sutures, these tissues, now a single layer, are everted. After an excision of the redundant vaginal wall, the mucous membrane is sutured with interrupted catgut sutures. Thus the anterior repair is finished.

The effect of these very important mattress sutures is to "lump" the tissues, and, by so doing, the supportive structure is given a much broader area of contact and added subsequent support. Within three weeks the tissues have well healed and the "everted" suture line has become a firm, smooth scar.

Using the above technique, I have operated with satisfactory results upon forty-four cases, their ages varying from twenty-five to sixty-five years, and in only one case has it been necessary to use a pessary thereafter.

CANCER IN THE MALE: DISCOVERED IN A CLINIC TREATING GENITO-INFECTIOUS DISEASES.

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The best information of the incidence of cancer comes from those communities in which medical practice is of high grade, actual causes of death correctly reported, and the population cancer conscious.

Why should the death rate from malignant tumors be apparently on the increase in the United States despite the excellent work of the medical profession, the community surveys and widespread propaganda activities of the national and local voluntary organizations? The fatalities from cancer are increasing annually.

There is no question that large numbers of people in many communities have not been reached by these educational drives and in consequence the dangers of cancer and the importance of early diagnosis and treatment have made no lasting impressions. While education of the public toward the recognition of the early signs of cancer is an important aspect of the control program, it is becoming increasingly evident that physicians and medical students should receive instruction in the modern and advancing fields of diagnosis and treatment of malignancies. Primarily many cases are missed due

to inept study and faulty diagnosis.

In our clinic we examine ten thousand patients a year and a small number are found to have new growths which are at times associated with a venereal infection, especially syphilis. In a recent review of our case records we found that a diagnosis of suspected malignancy was made on seventy-five patients in the past eight years. We have neither experts in this specialty nor the facilities for the thorough study which these patients demand and consequently we promptly refer them to private consultants when their resources permit, otherwise to a tumor clinic for detailed study. Out patients are drawn largely from those of the low income group who are prone to be careless in matters of health and tardy in seeking medical service.

The average age of males found to be suffering from gonorrhea or syphilis in our clinic is twenty-five years. The average age of the patients in this group in whom a malignancy was discovered is fifty-four years. The youngest patient was twenty-one years of age and the oldest eighty. There were only two negroes in this group aged forty-seven and fifty-six, the former had a carcinoma of the pancreas and the latter a cancer of the prostate.

The regions involved were:

Penis -----	10	Tongue -----	5
Testicle -----	5	Mouth -----	1
Scrotum -----	1	Stomach -----	3
Prostate -----	8	Colon -----	1
Bladder -----	8	Pancreas -----	3
Kidney -----	1	Rectum -----	6
Face -----	3	Thyroid -----	1
Nose -----	6	Thymus -----	1
Lip -----	6	Lung -----	2
Neck -----	4		

There were ten patients in whom cancer of the penis was suspected and in eight of these the diagnosis was confirmed and appropriate treatment given. Three of the ten patients had received treatment for syphilis. In two cases the diagnosis was not confirmed; in one of these syphilis was a complication. The extreme of age in this group were twenty-five to seventy-six years.

In five patients tumors of the testicle were discovered and malignancy proved in three of them; two patients failed to reach the consultant and were unconfirmed. Repeated efforts to have these patients return for further study were fruitless. The youngest patient was twenty-one and the oldest fifty

years of age. The former refused to consider surgery. None of these patients admitted having received treatment for syphilis and our examinations of them were negative.

A diagnosis of cancer of the prostate was made in eight patients and confirmed in six. Three of these patients with confirmed diagnosis had been treated for syphilis. The single patient who refused to consider further study was seventy-seven years of age and he stated that, "My life is nearly spent and I do not desire any further medical care." The youngest patient in the group was fifty-six years of age.

There were eight patients in whom malignancy of the bladder was strongly suspected and in five of them the diagnosis was confirmed. Three of the patients refused further study and they were lost. One of these patients had received treatment for syphilis. The age of the youngest patient in this group was forty-three years and the oldest seventy-five years.

There was one patient with a huge invasive growth of the scrotum which was undoubtedly malignant but he refused detailed study and our suspicions were not confirmed. He was sixty-six years of age. He gave no history of treatment for syphilis and our survey was wholly negative.

There was one patient in whom a large tumor of the right kidney was discovered. His only complaint was blood in his semen. A provisional diagnosis of hypernephroma was made and the diagnosis confirmed by operation. This patient was forty-three years of age. There was no history or physical evidence of syphilis.

There were nineteen patients with lesions about the face, nose, lip and neck and in six our suspicions of malignancy were confirmed. Five of these cases had received treatment for syphilis. The remaining twelve refused a complete study and failed to report to the consultant after one visit. The youngest patient in this group was twenty-seven years of age and the oldest seventy-three.

A diagnosis of carcinoma of the tongue was made in five cases and of the mouth in one case. The diagnoses were confirmed in each instance. All of these patients had received treatment for syphilis. The youngest patient was fifty-six years of age and the oldest eighty years.

A malignancy of the stomach was suspected in three patients and confirmed in two of them. These

two proven cases of cancer had received antisyphilitic treatment. The third patient did not heed our advice and further investigations were not made. The ages of these patients were forty-three, fifty-one and sixty-two years, respectively.

We discovered a tumor of the abdomen in one patient and cancer of the colon was suspected but he refused any further study and was lost. His age was forty-one years. He gave no history of having received treatment for syphilis.

In three patients carcinoma of the pancreas was suspected and confirmed in two of them. These two patients with a proved malignancy had received treatment for syphilis. The third patient did not report to the consultant for further examination. The ages of these patients were forty-seven, forty-nine and fifty-four, respectively.

There were six patients with suspicious lesions of the rectum, and cancer suspected, and in four of them our clinical impressions were confirmed pathologically. None of them had syphilis. Two of the patients failed to reach the consultant and they were lost. The youngest patient was forty-two and the oldest seventy-one.

There was one patient with a thyroid tumor which we suspected of being malignant but he did not reach the clinic to which he was referred. There was no history of syphilis. His age was twenty-seven.

There was one patient with a tumor of the chest and a provisional diagnosis of malignancy of the thymus was recorded. He was referred to a university clinic and at operation the impression was verified. No physical or serologic evidence of syphilis was found. He died a few days after he was operated upon. His age was thirty-one.

There were two patients in whom suspicious malignant tumors of the lung were found, both of which were confirmed by operation. One patient died within a few hours following thoracotomy. Both of these patients had been treated for syphilis. Their ages were forty-six and forty-eight, respectively.

Of the total number of seventy-five cases, forty-seven were found to have a malignancy and the diagnosis confirmed pathologically. Details are given in the table.

Of the group of seventy-five patients, twenty-seven had received treatment for syphilis. No patient in

this series was suffering from a gonococcal infection at the time of admission, but thirty-eight gave a history of fifty-four attacks. There were twenty-one patients with a positive serologic test at the time of their referral and in nineteen of them our suspicions of cancer were confirmed.

	No. CASES	CONFIRMED	UNCON- FIRMED	TREATED SYPHILIS
Penis	10	8	2	4
Testicle	5	3	2	
Scrotum	1		1	
Prostate	8	6	2	3
Bladder	8	5	3	1
Kidney	1	1		
Face, Nose, Lip, Neck	19	6	13	5
Tongue and Mouth ..	6	6		6
Stomach	3	2	1	2
Colon	1		1	
Pancreas	3	2	1	2
Rectum	6	4	2	2
Thyroid	1	1		
Chest	1	1		
Lungs	2	2		2
—	—	—	—	—
Total	75	47	28	27

Of the seventy-five patients referred for study and treatment, one-third of them either refused to carry out our instructions and those of the consultant, or did not return after the first visit. These derelictions occurred despite the intensive efforts of physicians, medical social workers in our clinic and in the tumor centers. The principal cause of the delinquencies in most cases was found to be the fear of a biopsy. The dread of any surgical procedure is apparently highly developed, especially in the foreign born patients, and this may stem from the ancient idea that cancer is incurable and surgery is dangerous. On the other hand it may be hope in the patient's mind that the physician may be in error in his diagnosis rather than fear of disaster which makes him careless in seeking and obeying the needed medical advice. The boldest offenders are those with painless hemorrhage from the urethra or rectum in whom tissue examinations are imperative for a final diagnosis.

The part that syphilis plays in the production of cancer, especially of the mouth, throat, tongue and lip, is not known but there is less cause of confusion on skin than on mucosal surfaces. The clinical differentiation between malignant growths of the tongue or tonsil and a gumma may be impossi-

ble. When there is a question of the diagnosis between syphilis and neoplasm anywhere in the body, the new growth takes precedence. Any surgical procedure biopsy, electro-coagulation, or radiation takes priority over therapeutic trial, for valuable time may be wasted and a hopeful condition become incurable. If the therapeutic test is used, several injections of arsenic will usually be sufficient.

Leukoplakia buccalis is frequently found in patients with syphilis and therapy produces slight beneficial effect. The purpose of treatment of late syphilis complicated by leukoplakia and gumma is the prevention of local gummatous relapse which may undergo malignant degeneration.

The consensus of syphilologists is that leukoplakia may be a precancerous lesion and should be treated by removal of all irritations in the mouth. Surgical procedures such as electrodesiccation and radiation are often indicated.

In the consideration of malignancies physicians will need to cultivate a bifocal point of view of patients. They should see clearly the dangers from neglected or undiscovered tumors on the far horizon and the immediate necessity for careful and thorough study of patients under their own noses.

SUMMARY

1. A report of seventy-five patients in whom cancer was suspected discovered in a clinic treating genito-infection diseases is presented.
2. The regions affected and the number of cases are given in a table.
3. Of the seventy-five patients, forty-seven were carefully studied and the diagnosis confirmed. Details are shown in a table.
4. The records of twenty-seven patients revealed that they had received treatment for syphilis. In twenty-one cases positive serologic tests were present at the time of referral.
5. The review shows that one-third of the patients either refused or neglected to submit to a thorough study. The major cause for this non-compliance was found to be due to fear of biopsy.
6. A discussion of the role that syphilis plays in malignancy, especially of the mouth, tongue and throat, is given.
7. There is urgent need for more careful study, control and follow-up of suspected cases of cancer.

159 North Dearborn Street.

REPORT OF 155 HERNIA OPERATIONS WITH FOLLOW-UP AND A METHOD OF OPERATIVE PROCEDURE.

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Harrisonburg, Virginia.

This is a report of 155 hernia operations performed on 142 patients during the year of 1937 and the first six months of 1938 in the U. S. Marine Hospital, Baltimore, Maryland. I have attempted to follow them up from a period of not less than three years during which time I have sent out numerous letters and self-addressed post cards to get a proper appraisal of the results obtained with the type of repair which I used. Despite my endeavor, I have only been able to get seventy-three accurate follow-ups. Of those cases which were followed, thirty-eight of them were examined by myself or other surgeons in the U. S. Public Health Service; the balance either were examined by their family physicians, or had no examination.

The average age of the patients was forty-four years, the youngest eighteen, and the oldest was seventy

years of age. As most of these cases were men who did a manual type of work, I feel that the repairs were subjected to a fairly severe test. The type of repair used on each case was somewhat varied. However, in general, the procedure followed was similar to that described as a Halstead repair.

The skin incision is made from a point over the pubic tubercle and extended proximally and laterally to a point opposite, and one and one-half inches medial to, the anterior superior spine of the ilium. After thorough exposure of the external oblique aponeurosis and the external inguinal ring, the external aponeurosis is split in the direction of its fibers for a distance of about six inches. Special care must be used at this time to preserve the integrity of the ilio-hypogastric and ilio-inguinal nerves, for if these nerves are injured, the muscles

of the lower abdominal walls which they supply will become lax and recurrence will likely ensue. Careful blunt dissection separating the aponeurosis of the external oblique from the internal oblique muscle is now done and in this procedure, the shelving portion of the inguinal (Poupart's) ligament is bared. The cord is then lifted from its bed and by examining the inner aspect of the cord as it emerges from the abdominal wall, the hernia sac may usually be brought into view. If the hernia is indirect, the sac will be lateral to the inferior epigastric vessels, and if it is direct, it will be medial to the same vessels. The next step is the isolation and deep dissection of the peritoneal sac. It is at this point that I believe many hernia repairs fail, for I believe that careful and complete dissection of the peritoneal sac with high ligation of the same and transplantation of this ligated sac through the internal oblique and transversus abdominis muscles is essential to prevent a recurrence. Following this, the fascia of the internal oblique is sutured to the shelving portion of the inguinal ligament, thus, forming

	NOT RECURRENT			RECURRENT		
	1 yr.	2 yrs.	3 yrs.	6 mos. or less	1 yr. or less	2 yrs.
Examined-----	10	15	11	none	2	1
Ascertained by letter only----	11	11	15			

a new bed for the cord. This repair may be further strengthened at this point by using a strip of fascia of the external oblique to reinforce the floor of the new canal. Following this, a new roof for the cord is formed by re-suturing the aponeurosis of the external oblique.

I have repaired hernias using silk and catgut in equal proportions, and I do not believe that there is any difference in the results of the repair, even though, theoretically, silk is the better. The only danger is, if any infection ensues, most likely it will be necessary to remove the silk sutures before drainage will stop.

In regard to the use of fascia in this particular series of cases, eight were repaired with ox fascia, twelve with autogenous fascia from the external oblique and eight with autogenous fascia from the ilio-tibial ligament on the lateral side of the thigh. On the whole, the use of ox fascia has been satisfactory for me with the exception of one or two patients who were apparently sensitive to the fascia. However, I do not believe there is any doubt in the

mind of any surgeon that the use of autogenous fascia is better. Ten of these cases had other operations done at the same time such as appendectomy, hydrocelectomy, etc., and from my observations, it matters little if the procedures of this type are done at the same time of the hernia operation or not. Sixteen of these cases had hernia repair on both sides at the same operation. I do not believe this is wise if it is possible for the patient to return for a separate repair of the opposite side at a later date, for there is bound to be some strain on the abdominal wall when both sides are repaired at the same time.

With regard to hernia repair in children and to repair of relaxed inguinal rings, I believe that a Ferguson type of repair will prove to be entirely satisfactory.

In this group of seventy-three cases which I was able to follow up as shown by the table, the three recurrences were as follows: one was a right inguinal indirect hernia in a thirty-seven year-old man which recurred in ten months. Another was a right inguinal indirect hernia in a thirty-one-year-old man which recurred in two years who blamed "too much heavy work" on his recurrence. The third was a right recurrent inguinal hernia which was repaired with ox fascia on a thirty-nine-year-old man. This recurred in ten months. The latter patient developed subcutaneous infection while in the hospital which healed in about two weeks from the operative date. Thus the recurrent rate for all of the cases followed was 4.1 per cent.

In summary, I wish to state that hernia patients should be selected, when possible, and hernia repair should not be done without fore-warning the patient of a probable recurrence if one of the below factors is present: first, in a patient who has asthma, hay-fever or a chronic cough from any cause; second, a patient who has stricture of the urethra, hemorrhoids or any other condition which would cause him to strain during elimination; third, in a patient who is obese and who will not reduce. Any patient who gains much weight following hernia repair is very definitely a candidate for recurrence.

Another point that should be observed is that any patient who has worn a truss for a long period of time is very likely to have an area of devitalized skin where the truss maintained its pressure, and when possible, the truss should be left off for at least a month before repair is done in these cases. My routine is to keep all indirect hernia cases in

bed two weeks, and direct, recurrent and other types of hernia are kept in bed eighteen days following repair.

With observations of the above factors and with proper attention to complete dissection and high ligation of the sac with proper fascia-to-fascia suturing, I believe that the percentage of recurrences in hernia repairs can be lowered.

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508 National Bank Building.

SELECTED CASE REPORTS OF MATERNAL DEATHS

By THE MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The Maternal Health Committee of the Medical Society of Virginia, under the chairmanship of Dr. Pierce Rucker, of Richmond, has assigned itself the task of reviewing all the deaths in Virginia associated with the pregnant state. The Bureau of Vital Statistics refers to the Bureau of Maternal and Child Health all death certificates assignable to the group of maternal deaths. Members of the Bureau of Maternal and Child Health investigate the pertinent facts concerning each death and present the information obtained to each member of the committee. The committee members review the cases, without knowledge of the identity of the patient, her residence, the physician, or the hospital concerned. The committee members have at times freely criticised the management of certain of the complications resulting in death. A discussion of the presumable errors in management have a distinct educational value, and at times we have used some of the basic facts in the various cases as teaching material.

In the belief that a brief presentation of the essential facts in some of the instances of maternal death may have a definite educational value, the committee has decided to present from time to time a synopsis of some of the deaths—with a few remarks by one or more members of the committee.

The committee attempts to determine whether the deaths are preventable or non-preventable, and if preventable wherein the faults lie. Criticisms of the obstetrical management are made purely on an educational basis with the hope of further reducing the maternal mortality in Virginia. In brief, the members of the committee are giving their time in a sincere effort to determine why five mothers died in Virginia in 1939 for each 1,000 live births, and

why 4.5 died in 1940 for each 1,000 live births. In a conscientious attempt to determine why the maternal mortality rate is twice as high in Virginia as in some other states, the committee analyses the deaths, and in the hope of acquainting the profession in the state of the situation, certain of the cases will be briefly presented in the VIRGINIA MEDICAL MONTHLY.

CASE REPORT

A 36 year old colored multipara who had nine other children, was first seen by a physician at noon on July 21, having convulsions. Examination showed generalized edema, fluid in the chest, bleeding from the mouth, and fecal and urinary incontinence. Blood pressure 240/150. Not in labor.

Treatment consisted of morphine and atropine, hypodermically, and an ampoule of 25% magnesium sulphate intramuscularly (amounts not stated). Sodium amytal gr.iii rectally. Convulsions had occurred before the arrival of the physician, some while he was there, and others after his departure. The patient died five hours after the visit of the physician.

Members of the family stated that the patient had been to see a physician a number of times during the prenatal period, but this was not the physician who attended the patient at the time of the convulsions; the physician herein referred to did not recall having seen the patient prenatally.

COMMENT

This is obviously an obstetrical death. It is felt to be a preventable death. The important negligent factor in the death is the absence of prenatal care. This 36 year old, colored multipara no doubt had hypertensive disease even before the last pregnancy

began, and an adequate examination in the early months would have detected its presence, and would have indicated the termination of the pregnancy and sterilization. The failure to have obtained adequate early prenatal care seems to have been due to a lack of knowledge or neglect on the part of the patient and her family.

If a physician was seen a number of times during the prenatal period as stated by the family, but denied by the physician, then it would seem that inadequate care was given by the physician. It would have seemed wiser for the physician, who was called during the convulsive seizures, to have made some effort to enter the patient in a hospital. There is no record on the information available to the committee that a hospital was not accessible. Hospitalization for more adequate sedation, digitalization, oxygen administration and hypertonic glucose solution may have offered this individual a better chance for survival.

In summary, this colored mother of nine children died in convulsions because of the lack of adequate prenatal examinations and treatment.

Correspondence

NOVEMBER 4, 1941.

A True Virginian.

TO THE EDITOR:

I have read with surprise, distress and indignation the note on page 678 of the MONTHLY for November, reporting the Annual Meeting of the American Public Health Association. In that note I find myself referred to as a "former Virginian."

There is no such thing as a "former Virginian". Being a Virginian is a chronic, incurable, life-long affection that absence from the Sacred Soil exacerbates rather than relieves.

When my name appears in the Obituary Record, I may of necessity be a "former" Virginian, though I am not any too sure about that. Until then I am a Virginian.

With sincerest good wishes,

Very truly yours,

ALLEN W. FREEMAN, M.D.

Miscellaneous

Civilian Defense.

Dr. George Baehr, Chief Medical Officer of the Office of Civilian Defense, Washington, D. C., has announced the appointment of a subcommittee of the Advisory Board of the Medical Division, Office of Civilian Defense, to prepare recommendations on protective procedures for hospitals in the event of belligerent action.

Dr. Robin C. Buerki, dean of the Graduate School of Medicine and director of hospitals of the University of Pennsylvania, Philadelphia, a member of the Medical Advisory Board, is chairman of the new subcommittee, other members of which are: Dr. Willard C. Rappleye of New York City; Dr. Asabel J. Hockett of New Orleans; Dr. Anthony J. J. Rourke of San Francisco; Dr. Joseph Turner of New York City; and Dr. Huntington Williams of Baltimore.

The subcommittee held its first meeting at the Hotel Commodore, New York, November 8. With Dr. James M. Mackintosh, former Chief Medical Officer of the Scottish Ministry of Health, as a guest to advise the group, measures for preventing or minimizing damage to buildings, handling of casualties, evacuation, provision and protection of supplies, and training of personnel for specific duties in case of bombing were discussed in detail. The basis for discussion was a study made by a committee of the American Hospital Association on physical defense of hospitals, of which Dr. Hockett is chairman.

Dr. Mackintosh also conferred with the staffs of the medical and civilian protection divisions of the OCD at the Washington headquarters, November 7, describing in detail Britain's organization of its protective services, its early mistakes and the measures taken to correct them.

The basic organization for rescue work in a given area consists of three essential groups with a central control, police, rescue and fire services, ARP control and medical services.

One of the early mistakes was the belief that it was imperative to have first aid workers on the scene of a bombing immediately. Bitter experience showed that injured persons were usually buried

under rubble and glass of their homes and that hours of work by the demolition and rescue squads were often necessary before first aid could be given.

Dr. Mackintosh emphasized the necessity for a central ambulance control. Ambulances are dispatched only by the central control and are not allowed to moved from a bombed area until routes to hospitals have been surveyed. To stop "panic calls" from individuals, private telephones are now cut off the moment an air raid warning sounds.

First aid posts, in addition to their obvious function of caring for the injured, are invaluable as rendezvous for rescue workers, physicians and nurses as well as the general population, who may become lost in the blackout, frightened, choked and blinded by dust, he said. In the first aid post the workers can clean up, have a cup of tea and return refreshed to their activities.

Free Medical Care*

News dispatches dated September 7, 1941, proclaimed the free doctor plan of the government of New Zealand, as noted editorially by this *Journal*, October 1, p. 1912. On September 8, the New York *Times* said of the plan:

"Though the bill may be modified as the result of the doctors' storm of protest, New Zealand's example (free doctor care) should be taken to heart. . . . But if we are not to go at least part way down the road that New Zealand is evidently bent on following we shall need to have a practical alternative. Organized medicine itself can, and should, provide that alternative by advocating a policy which will recognize the necessity of a sweeping change in the pattern of medical practice, make the hospital the center of every community's medical activities, bring the best that medicine has to offer to the needy, and permit the public to organize its own medical services under competent supervision."

Thus, the *Times* prescribes expertly for American medicine. . . .

We know nothing about the newspaper business ourselves, except what we have seen on the stage in such plays as *The Front Page*, or what we read occasionally in a magazine article or see in the daily

papers. But it must be an easy business to run. Just a matter of putting one letter after another and keeping at it; nothing to it, apparently, now that machinery has replaced the hand-operated methods of Gutenberg.

But even so the newspaper business compels our admiration. We in medicine are so hampered by the necessity to be sure of everything, so earth-bound by sordid fact and sober, even drab, reality, that we contemplate with awe the freedom of the press. Let us also confess that, with a little envy at times, we covet other occupations than our own, others in which life can be at once so simplified, so beautiful.

We suppose it is only natural now and then for one to feel that he has perhaps missed his calling. We do, be it confessed. Is it nostalgia? Perhaps. Or frustration? Maybe a little of both. In our case it takes the form of a longing, curiously enough; a longing to be in the newspaper business in which, during one of our depressed states, we like to fancy ourselves as one of the lords of the press. . . .

Gradually, the querulous voices of the familiar sick, the crying children, the screams of women in childbirth, the bubbling, halting, gasping of the dying seem to be drowned in the crescent grumbling of the presses. . . . the building shakes and quivers, even in the high soft carpeted office where we seem to sit at our vast, polished desk. Our mood of depression is superseded by a growing sense of exultation as we look about the noble apartment. We arise, we stride about uplifted as Gutenberg or Greeley must have been uplifted by a sense of power—power, might, dominion, majesty, glory. And the presses rumble as the papers flow, headlines screaming all the news that's fit to print.

A pressman rushes to us a copy of the edition still warm and a little damp; moist, as though sprinkled with the tears of those whose mortal struggle it chronicles. Black upon white; no gray tones of compromise, no tempering of justice with mercy. Power, might, dominion, glory! The unleashed energy of words thrills us as we glance at the front page, the foreign news, the editorials—letter on letter, sentence on sentence, precept on precept, page on page; a dynamic stream of power carries us onward, relentless, and so right!

We press the lever on the intercommunicating

*Editorial reprinted from *New York State Journal of Medicine*, October 15, 1941.

interoffice loudspeaking equipment with imperious finger. "Send us the Treasurer, Miss Tillinghast," we say to our secretary and resume our pacing. . . .

The watchdog enters. "You wanted me?"

"Ah, Entwhistle, I do indeed. Marvelous, Entwhistle, that's what it is. I don't see how they do it on the paltry sums you pay them! Don't interrupt; I say it's marvelous; the words, the power, the insight and imagination, Entwhistle, are—shall we say?—priceless. Pay them more, much more! Don't interrupt, do as I say and as you go out send me the foreman of the pressroom. . . .

"Ah, Ulsheffer, come in. I meant to speak to you before this; marvelous, my dear boy, simply marvelous. Can you stop the presses?"

"Stop them, sir? Why, yes; if necessary."

"Can you run them backward?"

"Backward? Why, no, sir!"

"Have them fixed at once so this can be done, Ulsheffer. Don't argue! Attend to it. Just the other day, Ulsheffer, I discovered a split infinitive. You understand that *this cannot be allowed to occur again!* If it does, I shall order the presses reversed. This will recall all the papers before the organization is disgraced—publicly. Attend to it, Ulsheffer, and send me in the the Sweeping Change Editor."

"But, sir—the Sweeping Change Editor?"

"Certainly; that's what I said, isn't it? Do I have to repeat myself?"

"But, sir, I don't know—."

"That will do, Ulsheffer. We do not use that expression in this organization; this is a newspaper; send him it."

"Yes, sir. . . ."

Power, might, dominion. . . .

"Ah, Kerksieg, come in; a word with you, sir. Marvelous, Kerksieg, simply marvelous! Admired your work for years. Your pay is raised. Keep on with the sweeping changes; turn the rascals out, Kerksieg; turn them inside out, upside down. If you think they are too big, make them smaller; if they are going ahead, march them backward; you know, Kerksieg, marvelous stuff, sweeping changes. And, Kerksieg—we cannot be paltry about these things you know; I have ordered a new broom to be delivered to you once a week. Use it vigorously! With us, Kerksieg, expense is no object."

Public Health Statistics

I. C. RIGGIN, M.D.,

State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for October, 1941, compared with the same month in 1940 and for the period of January through October, 1941, compared with the same period in 1940 follows:

	OCT. OCT.		JAN.- JAN.-	
	1941	1940	OCT. 1941	OCT. 1940
Typhoid and Paratyphoid Fever	88	34	267	222
Diarrhea and Dysentery	928	131	5,061	1,715
Measles	105	106	3,726	3,594
Scarlet Fever	143	129	1,159	1,290
Diphtheria	155	89	466	493
Poliomyelitis	33	59	119	183
Meningitis	3	6	92	63
Undulant Fever	4	2	13	20
Rocky Mountain Spotted Fever	0	4	32	45
Tularemia	0	3	20	40

VIRGINIA'S PNEUMONIA PROGRAM

The reduction in the fatality rate of pneumococcal pneumonia first through the use of antisera and more recently the sulfonamide drugs is one of the outstanding contributions of medicine to society during the last decade. That fewer than half as many deaths occur among patients given one (or both) of these agents, as occur from this illness if not treated by such specific measures is a therapeutic advancement of real merit. The ultimate value of this scientific achievement can be realized, however, only when it has been made available and applied to all who may need or may benefit from its provisions. Toward this objective have the efforts of the Pneumonia Commission and the State Department of Health been directed. Through the co-operation of these agencies a state-wide pneumonia program designed to provide material aid in the diagnosis and treatment of medically indigent pneumonia patients was inaugurated in October, 1940.

The pneumonia control program described in detail in the July, 1940, issue of the VIRGINIA MEDICAL MONTHLY embodies as its principal provisions the distribution of sulfapyridine, sulfathiazole and type specific antipneumococcic sera for the treat-

ment of medically indigent pneumonia patients and the performance of laboratory examinations (including pneumococcus typing, hemogram, blood culture, urinalysis and drug blood level determinations) to aid in the diagnosis and to facilitate the treatment of all patients unable to pay for these tests. These services and materials are made available through thirty-nine clinical and public health laboratories throughout the State. The determination of medical indigency is left entirely with the attending physician whose written request for therapeutic materials or laboratory examinations authorizes the laboratory to provide these services. Payment of the attending physician for his services does not necessarily exclude the right of the patient to the provisions of the program which is intended rather to provide aid in all cases in which the patient is unable to pay for any or all services facilitating the best chance of recovery from his illness.

In addition to the wholesome support of the profession through its state and local societies the plan for pneumonia control in Virginia is essentially dependent upon the cooperation of the practicing physicians individually as to the degree of effectiveness which it attains. The response of the profession in participating in the program in many areas has been gratifying. In other sections, however, the state facilities have been utilized to little if any extent. It is obvious that considerably wider application of the principles of the pneumonia program will be necessary before any material reduction in the general mortality from this disease is to be realized. Present knowledge will permit a decided reduction of gains in the death toll from pneumonia in Virginia. Achievement of this goal is dependent in no small measure upon an increasing participation of the practitioners in every effort which will make available the benefits of such knowledge to every citizen of this State.

Requests for information in regard to the Virginia Pneumonia Program will be gladly furnished by the State Department of Health and they, as well as the Pneumonia Commission, welcome suggestions and constructive criticism from the profession at all times.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.

President-Elect—MRS. H. W. ROGERS, Norfolk.

Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.

Corresponding Secretary—MRS. A. S. LILLY, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, Richmond.

Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Woman's Auxiliary to Norfolk County Medical Society.

Officers of this Auxiliary for 1941-42 are: President, Mrs. Walter P. Adams; president-elect, Mrs. W. E. Butler; vice-presidents, Mrs. W. Tilden Smith, Mrs. J. R. St. George of Portsmouth, and Mrs. S. Byron Pope, Jr.; recording secretary, Mrs. R. M. Reynolds with Mrs. B. L. Parrish as assistant; corresponding secretary, Mrs. R. Bryan Grinnan, Jr., with Mrs. Brock D. Jones as assistant; treasurer, Mrs. James W. Anderson, with Mrs. Wm. R. Tyson as assistant; historian, Mrs. Starke A. Sutton; and parliamentarian, Mrs. C. C. Smith.

The committee chairmen are:

Public Relations—MRS. T. N. Spessard.

Health Education—MRS. MILLARD B. SAVAGE.

Publicity—MRS. C. C. SMITH.

Social—MRS. C. M. MCCOY.

Courtesy—MRS. M. N. KING.

Tuberculosis—MRS. W. TILDEN SMITH.

Layette—MRS. GEORGE A. DUNCAN.

Hygeia—MRS. LEMUEL E. MAYO.

Membership—MRS. M. H. BLAND.

Birthday—MRS. WM. P. McDOWELL.

Exhibit—MRS. C. J. DEVINE.

Ways and Means—MRS. CHAS. H. LUPTON.

Jane Todd Crawford—MRS. T. ELMORE JONES, Portsmouth.

Telephone—MRS. W. RUFUS KIGHT.
and Mrs. Starke A. Sutton.

Bulletin—MRS. ALBERT G. HORTON.

Revision—MRS. WILLIAM LETT HARRIS.

Finance Committee—MRS. JAMES W. ANDERSON, chairman, Mrs. Wm. R. Tyson, assistant chairman, and Mrs. W. E. Butler, Mrs. H. W. Rogers, and Mrs. Albert G. Horton.

(All addresses are Norfolk, unless otherwise noted).

Proceedings Medical Society of Virginia

October 6, 7 and 8, 1941

The Cavalier

Virginia Beach, Virginia

FIRST GENERAL SESSION

Tuesday Morning, October 7, 1941

The opening general meeting of the 1941 Annual Session of the Medical Society of Virginia was held in the ballroom of the Cavalier Hotel, Virginia Beach, Va., on Tuesday morning, October 7, 1941, being called to order at 9:45 o'clock by Dr. George A. Duncan, Norfolk, General Chairman of the Committee on Arrangements.

The invocation was said by the Reverend Joseph B. Clower, Jr., Pastor of the Presbyterian Church of Virginia Beach.

Dr. Duncan then announced some slight changes in the program and presented the first issue of "The Medical Daily," the convention news sheet, an innovation at this meeting.

The President, Dr. Walter B. Martin, of Norfolk, was presented by Dr. Duncan and read his President's address, entitled "Organized Medicine and the Public Welfare."

The Memorial Hour was next observed. No member of the Membership Committee being present, the President asked Dr. G. F. Simpson, of Purcellville, to read the list of members deceased since the last meeting.

Members Whose Deaths Have Been Reported Since the 1940 Meeting

Dr. Asa Wesley Graves, Lacey Spring, April 12, 1940
Dr. David Nicol Twyman, Appomattox, June 25, 1940
Dr. Norborne Page Cocke, Charlottesville, June 29, 1940
Dr. Francis Randall Hagner, Washington, D. C., July 7, 1940
Dr. William Isaac Painter, Tazewell, July 20, 1940
Dr. J. S. Smith, Radford, July 23, 1940
Dr. Thomas Dudley Merrick, Richmond, July 28, 1940
Dr. Everett Eldridge Watson, Salem, August 3, 1940
Dr. Enoch Wilson Baxter, Moyock, N. C., August 10, 1940
Dr. Lewis Abner Law, Alberta, August 13, 1940
Dr. Frank Knight Lord, Richmond, August 18, 1940
Dr. Rudolph Angus Nichols, Richmond, September 5, 1940
Dr. Perkins Glover, Arvon, September 5, 1940
Dr. Harry Preston Gibson, Leesburg, October 2, 1940
Dr. John Gilmer Reynolds, Chatham, October 25, 1940
Dr. Joseph Thomas Buxton, Newport News, November 5, 1940
Dr. John Shelton Horsley, Jr., Richmond, November 22, 1940
Dr. Emory Hill, Richmond, December 4, 1940
Dr. Samuel Hutchings Price, Montvale, December 13, 1940

Dr. William Oliver Smith, Altavista, December 17, 1940
Dr. Karl Sigismund Blackwell, Richmond, December 26, 1940
Dr. Prentiss Dupuy Johnston, Tazewell, January 3, 1941
Dr. Paul Brandon Barringer, Charlottesville, January 9, 1941
Dr. Francis Lee Thurman, Buena Vista, January 19, 1941
Dr. William Elbert Jennings, Danville, January 26, 1941
Dr. Phil Hawkins Neal, New York, N. Y., January 22, 1941
Dr. Edward Anderson Holmes, Marion, February 4, 1941
Dr. Moses Hoge Tredway, Emporia, February 8, 1941
Dr. Joseph Augustus White, Richmond, February 16, 1941
Dr. Thomas Bernard Latane, Stevensville, February 18, 1941
Dr. John Wyatt Davis, Sr., Lynchburg, February 27, 1941
Dr. James Taylor Walker, Richmond, March 12, 1941
Dr. Llewellyn Powell, Alexandria, March 13, 1941
Dr. Richard H. Peake, Norfolk, March 6, 1941
Dr. George Johnson Tompkins, Lynchburg, April 2, 1941
Dr. Harry Barton Hinchman, Richmond, April 7, 1941
Dr. William Tell Oppenheimer, Jr., Richmond, April 20, 1941
Dr. David Oswald Foley, Mt. Jackson, April 24, 1941
Dr. Aurelius Rives Shands, Sr., Washington, D. C., April 27, 1941
Dr. Joseph Nicholas Applewhite, Capron, May 5, 1941
Dr. William Tell Oppenheimer, Sr., Richmond, June 11, 1941
Dr. Thomas David Jones, Richmond, June 12, 1941
Dr. Rollie T. Akers, Alum Ridge, June 16, 1941
Dr. Franklin McCue Hanger, Staunton, June 17, 1941
Dr. Frederick M. Brooks, Fairfax, June 21, 1941
Major Allen J. Black, Richmond, June 25, 1941
Dr. Edgar A. Pole, Hot Springs, July 19, 1941
Dr. William Witmer Kerns, Bloxom, August 23, 1941
Dr. Bolivar Buchanan McCutchan, Clifton Forge, September 9, 1941
Dr. Samuel Meredith Wilson, Lynchburg, September 14, 1941
Dr. Isaac Peirce, Tazewell, September 18, 1941
Dr. Jesse Martin Shackelford, Martinsville, October 2, 1941

The members then stood in silence for a moment, in respect to the memory of those departed.

Scientific Sessions

(Dr. J. E. Knight, Warrenton, Vice-President, presiding.)
Dr. W. P. Jackson, Commander (MC), U. S. Naval

Reserve, Norfolk, read his paper entitled "The Airplane, a Possible Means of Transmission of Disease," which was discussed by Dr. Hugh H. Trout, Roanoke, and Dr. I. C. Riggin, State Health Officer, Richmond, and in closing by Dr. Jackson.

The paper of Drs. Charles Stanley White and J. Lloyd Collins, of Washington, D. C., entitled "Surgical Indications for the Use of Blood Plasma," was read by Dr. White. This was discussed by Dr. Charles M. Caravati, of Richmond.

Dr. Randolph H. Hodge, Richmond, read his paper entitled "Carcinoma of the Cervix: Time Lost before Treatment" (illustrated by lantern slides), which was discussed by Dr. Wright Clarkson, Petersburg.

The paper of Drs. Byrd Stuart Leavell and John Osborne McNeel of University, entitled "Infectious Mononucleosis: Unusual Manifestations," was read by Dr. Leavell; and this was discussed by Dr. J. Hamilton Scherer, Richmond.

President Martin, who had taken the chair, then introduced Dr. Louis Hamman, guest speaker from Baltimore, as follows:

"I am especially delighted to have the pleasure and the honor of presenting the next speaker. He is known to most of you and consequently does not need an elaborate introduction, because you know him both as a teacher and as a man. One of the things to which I looked forward more than anything else when you did me the honor of making me President of this association was the opportunity of inviting Dr. Louis Hamman to this meeting. I look upon him as a very close personal friend, and I say without exaggeration that whatever I know in medicine I owe to his teaching.

"It gives me pleasure to present to you now Dr. Louis Hamman, of Baltimore."

Dr. Hamman then conducted the Clinical Pathological Conference, being assisted in this by Dr. Arnold F. Strauss and Dr. L. J. Motyka, pathologists of the Norfolk General Hospital, Norfolk.

The program having been completed, the morning session then adjourned, at 1:15 p. m.

Tuesday Afternoon

The Society reconvened in the ballroom of the Cavalier Hotel and was called to order at 2:45 p. m. by the President, Dr. Walter B. Martin, who spoke as follows:

"It will be our great pleasure this afternoon to hear from a veteran of the last World War, an eminent surgeon who has for the last two years been Chief of Staff of Walter Reed Hospital, Washington. Before that time Colonel Kirk, our speaker, was stationed in Manila for two years, having previously been Chief of Staff of the Letterman General Hospital, San Francisco, and assistant to the Chief of Staff of Walter Reed Hospital. You are doubtless all familiar with his numerous contributions to the literature on amputation, gastric resection, and the nondrainage treatment of appendicitis with the employment of sulfanilamide. Today he is going to tell us about some of the problems with which our Army Medical Department is now confronted. I am

extremely happy to present Colonel Norman T. Kirk, of the United States Army Medical Corps, Washington, D. C."

Colonel Kirk then addressed the Society on the subject of "Some of the Problems of the Medical Department in the Present Emergency."

At this point the program was divided into Medical and Surgical Sections, those interested in the Medical Section remaining in the ballroom. This Section was called to order by Dr. Wyndham B. Blanton, of Richmond, who had been asked to preside.

Medical Session

Dr. C. Lydon Harrell, of Norfolk, read his paper entitled "Selective Service as Applied to the City of Norfolk," which was discussed by Drs. N. G. Wilson, Norfolk, and William B. Porter, Richmond, and by Dr. Harrell in closing.

Dr. James P. Baker, of Richmond, read his paper on "Sickle Cell Anemia" (illustrated by lantern slides), and this was discussed by Dr. William B. Porter, Richmond, Dr. James E. Paullin, Atlanta, Ga., and in closing by Dr. Baker.

A paper entitled "The Use of Heat in General Practice," illustrated by lantern slides, was read by Dr. Ben L. Boynton, of Norfolk.

Dr. Porter P. Vinson, of Richmond, read his paper on "The Management of Chronic Suppurative Pulmonary Disease", and this was discussed by Dr. C. Lydon Harrell, Norfolk, Dr. Dean B. Cole, Richmond, Dr. Walter L. Nalls, Richmond, and by Dr. Vinson in closing.

After announcements by Dr. Duncan, General Chairman of the Committee on Arrangements, this session adjourned at 5:20 p. m., the program having been completed.

Surgical Section

This Section convened in the Hunt Room of the Cavalier Hotel at 2:30 p. m., with Dr. E. P. Lehman of the University of Virginia presiding, and the program was taken up in order.

The first paper was on "Cancer of the Stomach" and was presented by Dr. Guy W. Horsley of Richmond, illustrations being shown. Dr. Lehman asked Dr. J. Shelton Horsley to preside while he discussed this paper, following which he called on Dr. Horsley, Sr., to speak on this subject also.

The next paper was presented by Dr. Donald S. Daniel of Richmond, his subject being "The Role of Internal Pneumolysis in the Treatment of Pulmonary Tuberculosis", and this too was illustrated. This paper was discussed by Dr. Dean B. Cole and Dr. O. O. Ashworth of Richmond, Dr. E. C. Drash of Charlottesville, Dr. C. P. Cake of Washington, D. C., and by Dr. Daniel, in closing.

Dr. Arthur M. Smith of Charlottesville, read the next paper, "Carcinoma of the Thyroid". Dr. George Zur Williams of Richmond, discussed this and was thanked by Dr. Smith, in closing.

The final paper of this program was by Dr. Philip Jacobson of Petersburg, his subject being "A Method for

Eradicating Congenital Sinuses by Electro-Coagulation and Steam, with Special Reference to Pilo-Nidal Sinuses". This was discussed by Dr. R. L. Raiford of Franklin, with Dr. Jacobson, in closing.

Following an announcement by Dr. Lehman, the meeting adjourned until Wednesday morning.

Wednesday Morning, October 8, 1941

Medical Section

The Medical Section of the Society met on Wednesday morning, October 8, in the ballroom of the Cavalier Hotel and was called to order at 9:15 o'clock by the President, Dr. Walter B. Martin.

The paper of Drs. Richard W. Fowlkes and Allen Pepple, of Richmond, entitled "Recent Advances in the Diagnosis and Treatment of Cutaneous Fungus Infections" (illustrated with lantern slides), was presented by Dr. Fowlkes. This was discussed by Dr. James W. Anderson, Norfolk, and in closing by Dr. Fowlkes.

Dr. M. Morris Pinckney, of Richmond, read his paper on "Mediastinal Emphysema" (illustrated by lantern slides). Dr. Staige D. Blackford, of University, and Drs. Paul D. Camp and Dean B. Cole, of Richmond, discussed the paper, with Dr. Pinckney closing the discussion.

The paper of Drs. Dean B. Cole and Walter L. Nalls, of Richmond, on "Pneumothorax in Ambulatory Patients" (illustrated by lantern slides), was read by Dr. Cole. This was discussed by Drs. Frank B. Stafford, of Sanatorium, and Frank Johns, Richmond, and by Dr. Cole in closing.

Dr. Charles M. Caravati, of Richmond, read a paper on "Hepatic Enlargement", which was discussed by President Martin and by Dr. T. Dewey Davis, Richmond, Dr. James E. Paullin, Atlanta, Ga., and Dr. Staige D. Blackford, University, and in closing by Dr. Caravati.

The paper of Drs. Allen Barker, Charles H. Peterson, and Charles D. Smith, of Roanoke, entitled "The Roentgenological Diagnosis of Gastro-Intestinal Hemorrhages" (lantern slides), was presented by Dr. Barker. This was discussed by Dr. Vincent W. Archer, University.

President Martin then introduced Dr. James R. Miller, guest, as follows: "It is a great pleasure to introduce to you our next speaker, a man whom I have known for a long time and esteem highly and who I am sure will give us something valuable this morning. He has always been interested in Virginia, because his mother was a native of this State.

"Dr. Miller has done a great deal of work in the standardization of the surgical and obstetrical technique in the hospitals in and around Hartford, with which he is affiliated, and he is largely responsible for the work done in Connecticut which has placed that State next to the lowest in maternal mortality.

"I now present to you Dr. James Raglan Miller, of Hartford, Conn."

Dr. Miller then read his address on the subject of "Office Gynecology", which was discussed by Dr. Waverly Payne, of Newport News.

The program having been completed, the morning session then adjourned, at 12:55 p. m.

Surgical Section

This Section was called to order shortly after 9:00 a. m., Wednesday, Dr. E. P. Lehman, of University of Virginia, presiding.

The first paper presented was by Dr. Eugene Lowenberg, Norfolk, whose subject was "Vaginal Smears as an Aid to Therapy in Gynecology". This was illustrated and was discussed by Dr. Waverly R. Payne, of Newport News, and by Dr. Lowenberg in closing.

The paper, "Management of Foreign Bodies in the Air and Food Passages, with an Analysis of 223 Cases" (illustrated), by Drs. E. G. Gill and James H. Gressette, of Roanoke, was read by Dr. Gill and discussed by Dr. V. W. Archer, of the University of Virginia.

Dr. J. M. Meredith, of Richmond, presented the next paper, entitled "The Surgical Management and Epilepsy". Lantern slides were shown with this, and it was discussed by Dr. C. C. Coleman, of Richmond, and Dr. D. C. Wilson, of the University of Virginia, with Dr. Meredith closing the discussion.

Dr. Julian L. Rawls, of Norfolk, next read his paper on "Present Day Concepts of Cancer of the Cervix". This was discussed by Dr. C. J. Andrews, of Norfolk, Dr. Bayard Carter, of Durham, N. C., and by Rawls, in closing.

The final paper of this section was on "Uterine Motility in Dysmenorrhea", by Dr. William Bickers, of Richmond. This was illustrated by lantern slides and discussed by Dr. Edwin M. Rucker, of Richmond, Dr. Bayard Carter, of Durham, N. C., Dr. H. B. Haag and Dr. R. J. Main, of Richmond, Dr. C. P. Cake, Washington, D. C., and by Dr. Bickers in closing.

The program having been completed, this Section adjourned.

Wednesday Afternoon

The Society reconvened in the ballroom at 2:30 p. m. and was called to order by the President, Dr. Martin, who introduced another guest speaker as follows:

"It is a privilege to introduce our speaker for this afternoon. I shall not go into his various professional qualifications, because they are extremely well known. He has one claim to fame, however, with which you are perhaps not familiar. Dr. Cave and Irvin Cobb have made Paducah, Kentucky, famous by having been born and reared there. I do not know which one the people of Paducah are more proud of.

"Henry Cave, who is a special friend of mine, was in school ahead of me and stayed ahead. It is a great pleasure now to present to you Dr. Henry W. Cave, of New York City."

Dr. Cave then spoke on "The Medical and Surgical Management of Ulcerative Colitis," illustrating his address with lantern slides.

Installation of President

PRESIDENT MARTIN: It is now my pleasure and privilege to present to you the incoming president of the Medical Society of Virginia. I would say at this time

that while this has been a pretty active and pretty busy year, to tell you the truth I have enjoyed it a great deal. I want to express to you my very deep appreciation of the honor you conferred upon me a year ago and tell you that I shall always look back to this year with the very greatest pleasure.

Will Dr. Moncure escort Dr. Miller to the platform?

Dr. Miller, it is a very great pleasure indeed to transfer the responsibilities of this office to your very able hands.

DR. ROSHIER W. MILLER: I thank you, Dr. Martin.

My fellow members and friends (I believe friendship almost exceeds the term "honored guests") and Mr. President, of course I feel deeply honored because you have given to me the highest gift within the hands of this organization. It is an honor that I accept very seriously, because there are great responsibilities. For one reason—my attendance upon these meetings from year to year has brought me to a very definite conclusion that friendship, after all, aside from the information and knowledge gained by attendance upon the scientific sessions, is certainly a very valuable asset. I want to take this opportunity to repeat what I said yesterday. It was worth almost anything during the past year to have worked with and under the retiring President. I am delighted to know that in this stalwart man I have found a good and warm friend, and I want to continue to merit and to have the friendship of Dr. Walter B. Martin. Friendships gained here are never broken.

I want to say here, in reference to committee appointments, that there will be a few appointments. Your speaker has made up his mind that where a committee's work touches on defense matters there will be no change unless some member requests it.

Finally, I want to give you my slogan. Some of you may have heard it, but it makes no difference. It indicates the feeling I have, though I cannot live up to it in its entirety. Many years ago, when visiting my father, who was then eighty-five years of age, he excused himself and said he was going to see an old, sick man across the street. He was himself ten years older than the sick man. I noticed that when he went across the street he excused himself from taking a chair on the porch and instead sat on the railing. When he came back I asked him why he did not sit down. He said "If I had sat down I would have had to stay too long; that man lives entirely in the past, and I don't want to stay long with him."

This is my slogan: "Yesterday is history. Read it for your pleasure and improvement. Today is one of duty. Put into it all you have. Go to bed tonight and dream of the morrow, and in the morning rise with renewed faith in Almighty God and confidence in yourself for the day's work."

PRESIDENT MILLER: Is there anything else to come up?

Since there is not, I now declare this annual meeting adjourned.

(Whereupon, at 3:20 o'clock p. m., the Society adjourned *sine die*.)

BUSINESS SESSIONS

Council, October 6, 1941

The annual meeting of the Council was held at The Cavalier, Virginia Beach, October 6th, at 11:00 a. m., with the President, Dr. Walter B. Martin, Norfolk, presiding. Others in attendance were Dr. Roshier W. Miller, Richmond, President-Elect; Drs. J. M. Emmett, Clifton Forge, and J. E. Knight, Warrenton, Vice-Presidents; Drs. Griffin W. Holland, Eastville; Julian L. Rawls, Norfolk; J. M. Hutcheson, Richmond; J. L. Hamner, Mannboro; W. L. Powell, Roanoke; A. F. Robertson, Jr., Staunton; A. D. Hart, Jr., University; and C. B. Bowyer, Stonega, Councilors; Dr. I. C. Riggins, Richmond, State Health Commissioner; Drs. H. H. Trout and J. W. Preston, both of Roanoke, and Mr. J. A. Rorer, University, representing the Department of Clinical and Medical Education; and Miss Edwards, Secretary.

The budget, as prepared by Drs. Hutcheson and Powell, was presented for consideration. It was moved and carried that the Committee on Scientific Exhibits be allowed an additional \$150.00, or as much thereof as necessary, for this year's work. It was also moved and carried that in the future, this committee be allowed an amount not to exceed \$350.00 and the number of exhibits be limited to thirty. It was moved and carried that the Woman's Auxiliary be allowed \$85.00 for this meeting.

The Budget Committee recommended that commercial exhibits be handled and managed jointly by a local chairman and the central office; that local convention expenses not exceed the amount collected, the surplus being retained by the State Society; and that all rules in conflict with this be rescinded. This was put as a motion and carried.

The members of the Department of Clinical and Medical Education were given the privilege of the floor, and Dr. Preston stated that whereas some \$400.00 is being returned to the Society this year, the Department has not had enough funds for the past several years to undertake one of its prime motives, i. e., to carry clinical education to the rural districts. It was felt, therefore, if the Department could accumulate a sufficient amount, some foundation might be interested in matching these funds, thereby aiding in putting on a post-graduate course. In view of this, it is the wish of the Department that they be allowed to retain any unused part of their appropriation from year to year.

Mr. Rorer stated that a fund of two to three thousand dollars could be accumulated over a period of several years and then they would have something definite with which to work in asking aid from a foundation. He suggested that the Society might set aside in a trust fund the unused appropriations, and the Department could be instructed to make preparation for a full-time clinician at a definite time, say within a period of a year or two.

Dr. Hutcheson stated that the Society is engaged in building up its general fund as it has not been many years since it had to borrow money on which to operate

and the Budget Committee feels the present policy that unexpended balances be returned to the general treasury is a good one. If this particular committee is allowed to keep its balances, some other committee will wish to do the same thing. It is the intention of the Society to save the money anyway and if there is any occasion upon which the work needs additional finances, it seems quite certain provision could be made at that time. The Budget Committee does not think it wise to commit itself to definite sums in the future as they do not know what the Society is facing in the way of finances.

Dr. Miller stated that the Council meets the first of the year and, as they cannot undo any action of the House of Delegates, he moved that it be allowed to make an additional appropriation if and when the Department presents suitable plans for work.

Dr. Riggin stated that the purpose in asking for the retention of this money is that the Department wishes to have the results which the Society expects. In building up a reserve, they can ask for assistance from an outside group, which would naturally want to know what the Department has in the way of funds.

Dr. Miller said he had this in mind in making his suggestion because the Department could only save about \$400.00 each year, whereas, if they come before the Council at a specified time they might be able to do the work immediately without waiting to build up a fund.

Dr. Miller's motion was then adopted.

The Budget was now approved as a whole.

The question of fees paid physicians for attending patients in jail was next brought up, and Dr. Riggin, who had been appointed to investigate this matter, stated that this is something which will have to be worked out in detail by a committee. It should be presented in the form of a bill going to the General Assembly. It being stated that this matter would be brought up in the House of Delegates, Dr. Hutcheson moved that the Council recommend to the House that this matter be referred to the Legislative Committee with the request that they confer with Dr. Riggin and a committee from the bar association and formulate plans for the care of the medical patients in jails and that the Council shall receive this report at their winter meeting and have power to authorize the committee to proceed with legislation if they approve. Seconded and carried.

A letter was presented from the Nelson County Medical Society in regard to increase in dues. Dr. Hart said he would talk to the doctors from Nelson County and explain this increase to them.

The Secretary asked how long should the men in service be exempted from the payment of annual dues. Dr. Powell moved that this exemption be extended for 1942. Seconded and carried.

Dr. Martin then read a letter from Dr. Akers, Councilor for the Fifth District, stating his regret at being unable to attend the meeting, and it was moved that the President be authorized to write him a letter expressing regret at his inability to attend and also to offer sympathy in the recent death of his father.

Being asked for a report on Medical Defense, Dr.

Trout stated that by the middle of November, the physical examinations at the local selective service stations would be done away with. These stations will be located in six centers of the State and all draftees will be sent to these for examination, except in cases of obvious disability when the local boards would have power of exemption. He said the doctors in Virginia have done an excellent work but he believed this new plan would operate better.

Dr. Riggin stated that he felt there could be a mutual advantage if the medical and dental associations could have a closer relationship between them. He felt the Society should give consideration to the appointment of one or two representatives each year to attend the Dental Association meeting. It would be an expression of good will and the two professions should work together. Dr. Miller moved that a special committee of three be appointed from this body to study this question of an alliance between doctors, nurses, dentists and druggists. Dr. Riggin said his idea was not a public health one but a question of doctors and dentists working together. Dr. Miller's motion was seconded and carried.

Dr. Martin said the Medical Society of the State of North Carolina had appointed delegates to the Virginia Beach meeting and read their names that the members might know and welcome them should they come in contact with them. They were:

Dr. D. W. Holt, Greensboro, N. C.

Dr. Robert E. Smith, Mt. Airy, N. C.

Dr. John C. Taylor, Washington, N. C.

Dr. W. G. Suiter, Weldon, N. C.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,

Secretary.

House of Delegates October 6, 1941

The first meeting of the House of Delegates was held at 2:30 p. m., on October 6th, with the President, Dr. Walter B. Martin, presiding. It being stated that a quorum was present, the roll call was dispensed with.

Minutes of the 1940 meeting were approved as printed in the September, 1940, MONTHLY.

The first order of business was the presentation of the budget as approved by the Council. Dr. Hutcheson, chairman, explained an appropriation for the Woman's Auxiliary for this meeting, the additional appropriation for the scientific exhibits, and the ruling of the Council that the commercial exhibits be handled jointly by the State Society and a local chairman. The above items were approved and the budget was adopted as follows:

BUDGET FOR YEAR

October 1, 1941—September 30, 1942

MEDICAL SOCIETY OF VIRGINIA

Salaries	\$2,790.00
Rent and phone	365.00
Stationery and Office Supplies	75.00
Repairs and Replacements	40.00
Postage	225.00
Audit Fee	30.00

Miscellaneous expenses	25.00
Social Security Tax	28.88
President's expenses	100.00
President-Elect's expenses	50.00
Councilors' and Officers' expenses	75.00
Delegates to A. M. A.	100.00
Scientific Exhibits	350.00
Dept. Clin. and Medical Education	1,200.00
Medical Economics	75.00
Legislation	—o—
Walter Reed Commission	75.00
Child Welfare	10.00
Maternal Health	20.00
Cancer	20.00
Medical Preparedness	75.00
Industrial Health	20.00
Convention expenses:	
Reporting	150.00
Programs	125.00
Badges	55.00
Registration cards	5.00
Reports for Delegates	15.00
Invited guests	200.00
Publicity	60.00
	<hr/>
	\$6,358.88

VIRGINIA MEDICAL MONTHLY

Salaries	\$2,790.00
Rent and phone	365.00
Preparation of Journal	6,500.00
Stationery and Supplies	35.00
Repairs and Replacements	40.00
Office postage	45.00
Audit fee	30.00
Miscellaneous expenses	20.00
Social Security Tax	28.88
	<hr/>
	\$9,853.88

Colonel E. T. Trice, State Medical Officer, was next asked to tell something of activities with regard to Medical Defense. He expressed appreciation for the work done by Virginia physicians in the Selective Service work, about 1,100 doctors having examined 75,000 men. This has been done without any compensation and with an extreme loss of time. He stated that a substitute had been adopted for the present plan of conducting examinations and would be put into effect in the next few weeks. Six stations will be established in the State for examination of draftees and the men will know immediately whether or not they are accepted for the army. Dr. Riggin's department has done all the serological work and will continue to do this. In answer to a question, Colonel Trice said it had not been decided if the new plan will do away with the present advisory boards as it is possible that they will be needed to weed out those definitely not able to do army work because of tuberculosis, insanity, crippling defects, etc.

Dr. Martin then read the names of delegates from the Medical Society of the State of North Carolina and invited any of them present to participate in discussions.

The reports of committees as published in the September, 1941, issue of the MONTHLY were next considered: **Executive Secretary-Treasurer** (page 528)—Accepted.

Publication and Program (page 538)—Accepted.

Scientific Exhibits and Clinics (pages 538-9)—Approved.

Department of Clinical and Medical Education (pages 539-40)—Adopted.

Legislation (pages 540-1)—Dr. Cole, chairman, explained the recommendations in the report of his committee. Following a discussion, this was adopted.

Medical Economics (page 541)—The following substitute for Section IV was offered by Dr. A. B. Hodges from the Norfolk County Medical Society:

Whereas, the system of providing medical care to jail prisoners appears to be illogical in the manner in which physicians are compensated for their services.

Be It Resolved: That the Legislative Committee confer with a Committee from the State Bar Association and with the State Commissioner of Health with the view of drafting suitable laws governing the medical care of jail prisoners in this State, and on authorization of the Council, present such proposed legislation to the next meeting of the State Legislature.

This was acceptable to Dr. Hundley, chairman, and the report was adopted as amended.

Dr. J. E. Knight, a vice-president, then took the chair, and the **Membership Committee** report (pages 541-2) was presented and adopted. Dr. Martin thanked the members for making him an Honorary Member, and returned to the chair.

Ethics—No report had been presented.

Advisory Board to Woman's Auxiliary (page 542)—Adopted.

The following report from the President of the Auxiliary was read and accepted:

As President of the Woman's Auxiliary to the Medical Society of Virginia I am pleased to submit the following report of the work of this organization for the year 1940-41.

The Medical Society of Virginia and the Woman's Auxiliary were invited to hold a joint meeting with the West Virginia Society and Woman's Auxiliary at Greenbrier White Sulphur Springs in July of last year. This was a most delightful occasion and we all returned home with increased enthusiasm and resolve to carry on to the best of our ability the work of the year before us.

Due to the fact that a goodly number of board members were absent, the post-convention board meeting was postponed to a later date. This meeting was held in Richmond with fifteen members present and the year's work fully discussed. In the meantime I had written to Dr. Martin asking suggestions and offering the assistance of the Auxiliary in any program or work he wished us to undertake.

New copies of the Constitution and By-Laws and Handbooks were needed as the supply was exhausted; a few minor changes were voted on and one hundred copies were ordered.

The Program chairman, Mrs. Kolipinski, the Public Relations chairman, Mrs. Rogers, and the Legislature chairman, Mrs. Chichester, met several times and worked out a splendid program. This was sent to the Advisory Councilors, and meeting with their enthusiastic approval, was promptly sent to each local president as an outline for her year's work.

I wrote to each state officer and local president to welcome her on our Board and to bespeak her wholehearted support and cooperation in all branches of the work for the year. This has truly been given, in full measure, by every one.

The mid-winter board meeting was held in Richmond the 26th of February with a large number of members present. Reports from chairmen and local presidents were read, various phases of the work and questions pertaining to the Auxiliary, were discussed. After the meeting adjourned a number of those in attendance met for luncheon and a very pleasant social hour.

Despite the earnest effort of our organization chairman, Mrs. E. Latane Flanagan we still have only eleven local auxiliaries. We have gained an enthusiastic new group, the Auxiliary to the Wythe County Medical Society, and are very glad to welcome them and wish them every success in their work. During the year the Auxiliary to the Lynchburg Academy of Medicine has expressed their desire to disband for a year—we hate very much to lose them and hope they will reconsider and reorganize at the end of that time.

Throughout the year all auxiliaries have cooperated in trying to get new members. "Every Eligible Woman a Member" is a slogan that we hope will become a reality; increased membership attests more vital interest in the work.

During the spring and early summer I was invited to visit a number of auxiliaries. It is a matter of deepest regret to me that I was able to attend only one of these meetings. In these days of world-wide unrest and need there is much that can be added to our work, and accomplished by united effort. I hope that our incoming President may have the opportunity of visiting each auxiliary—it means added interest to us all.

The reports from the various chairmen are most gratifying.

Mrs. Snead, Press and Publicity chairman, has kept us well informed with interesting articles each month in the MONTHLY.

Under the capable leadership of Mrs. Fletcher J. Wright the Leigh-Hodges-Wright Memorial has carried on its splendid work. This Memorial most justly deserves the wholehearted support of our entire organization.

Mrs. John R. Hamilton, chairman Jane Todd Crawford Memorial, has been most active, accumulating a substantial amount during the past two or three years, as Virginia's contribution to this Memorial. Mrs. Hamilton wrote a most interesting article on this subject which was published in the MONTHLY.

Exhibit chairman, Mrs. O. R. Fletcher, sent a very attractive exhibit to the national meeting in Cleveland. This was a large book composed of posters, one from each local auxiliary, depicting the work of that auxiliary for the year. We regret that all auxiliaries did not send posters. With the book went a map showing the location of each auxiliary in the State. This exhibit, with those from the different auxiliaries, is displayed here and I hope every one will see them. I am more than sorry that I could not attend the national meeting in Cleveland last June. We were very fortunate in having as our delegate to this meeting Mrs. E. Latane Flanagan, President-Elect of the Woman's Auxiliary.

It is with a feeling of deep personal regret that I must report the resignation of Mrs. Southgate Leigh as chairman of History, Archives and Research. Mrs. Leigh has served as chairman of this committee for a number of years and I am sure that I voice the sentiment of the entire organization when I say that we are very sorry to have her resignation.

The chairman of *Hygeia*, Mrs. Henry Townsend and the *Bulletin* chairman, Mrs. E. H. Trower, have made every effort to have this a most successful year and have added quite a number of subscriptions to their lists.

Beside the state-wide projects each auxiliary is doing

a full share of philanthropic work—relief, Red Cross, aid to local hospitals and in whatever way they can best serve the needs of its community.

At the mid-winter board meeting a letter was read extending to the Woman's Auxiliary an invitation to join the Virginia Woman's Council of Legislative Chairmen. This invitation was accepted.

To all of my state chairmen whose help and cooperation has meant so much to me, I extend my most sincere appreciation and thanks.

I wish also to thank the Richmond Auxiliary for the gracious hospitality shown us at each of the board and committee meetings held in that city.

It is a privilege, indeed, to have the opportunity to work with a band of women all interested in the things that tend toward the uplift and betterment of our fellowman—a privilege that I have deeply appreciated and one that has meant much to me. I bespeak for my successor a continuation of the splendid loyalty and support that you have so generously accorded me.

GRACE WILKINS HOLLAND.
(MRS. GRIFFIN W. HOLLAND).

A recess was given for the selection of the Nominating Committee and the following were named:

First District—Dr. R. D. Bates, Newtown.

Second District—Dr. P. St. L. Moncure, Norfolk.

Third District—Dr. W. B. Porter, Richmond.

Fourth District—Dr. J. L. Hamner, Mannboro.

Fifth District—Dr. C. R. Titus, Bassets.

Sixth District—Dr. Ernest Scott, Lynchburg.

Seventh District—Dr. Guy Fisher, Staunton.

Eighth District—Dr. M. B. Hiden, Warrenton.

Ninth District—Dr. P. Q. Daniel, Big Rock.

A letter from the Nelson County Medical Society with regard to the increase in dues to \$7.00 was read, and it was moved and carried that a letter be written explaining that this appropriation was made for only two years.

Judicial—Dr. Moncure, chairman, read the recommendations as printed in the MONTHLY (page 542) and added the following:

By-Laws:

Article V—Omit Section 13, which reads as follows: "All officers and delegates elected, all nominations made to the Governor and a summary of all other business transacted by the House of Delegates shall be reported to the Society at a general meeting before the close of the annual session."

Article VI—Section 6. Change word "Congressional" to "Councilor" in three places.

Article IX—Paragraph before Section 1. Change to read "All unexpended balances of any fund authorized in the budget shall on or before September 30th of each year revert to the general treasury."

Article IX—Add Section 8. "JUDICIAL. Section 8—The Judicial Committee shall study the Constitution and By-Laws of the Society and suggest necessary revisions and interpret its provisions in case of conflict or doubt as to specific meaning."

These recommendations were laid on the table to be voted on at the next meeting.

Child Welfare (pages 542-4)—Dr. Wilson moved that the Legislative Committee be authorized to secure legislation to carry out the recommendations in the re-

port and that the incoming Child Welfare Committee be instructed to take these matters up with the various departments named. The report was adopted.

Maternal Health (pages 544-5)—Dr. Rucker, chairman, stated that the committee feels they are not making full use of the data on case histories of maternal deaths, which is secured with so much effort. In New Jersey and Massachusetts, certain case histories are published in their medical journal. The committee plans, if it is the will of the House, that Dr. Tiffany Williams would edit these reports and submit his selection to Drs. Carson, Shamburger, and Winn, who would get permission from the doctor concerned to publish them in the MONTHLY. They believed this would aid materially in the work of the committee. Report adopted.

Walter Reed Commission (page 545)—Adopted.

Health Division of Virginia Welfare Conference (page 545)—Dr. Davis, chairman, called attention to the fact that there was an error in this report and the name of Dr. E. H. Williams should be used in place of Dr. J. N. Williams. The report was accepted.

Pneumonia Commission—Upon the request of Dr. Blanton, chairman, Dr. William Grossmann presented the following report which was adopted:

The Pneumonia Control Program, which was designed through the cooperative efforts of the Pneumonia Commission and the State Department of Health and which was described in detail in the last report of the Commission to the Medical Society of Virginia, was inaugurated on October 15, 1940. Preliminary to the institution of the activities entailed in this special program, technicians from all of the cooperating clinical laboratories were given demonstrations and training in the performance of tests for the determination of the blood concentration of sulfonamide drugs. Six one-day instruction courses were held in strategic locations throughout the State by a bio-chemist consultant who likewise continued to serve in an advisory capacity to all laboratories throughout the past year. The assistance of Mr. R. V. Bowers of the Medical College of Virginia, who performed this work, was of inestimable value in this phase of the program. The loss of his services, as a result of defense activities, will be greatly regretted during the next season.

The Commission prepared and drafted a short bulletin "An Outline of Treatment of Pneumococcus Pneumonia by Specific Measures", which was printed and distributed by the Virginia State Department of Health to all physicians. This bulletin was intended to serve as a guide for the treatment of their patients and represents a definite part of the general plan of the pneumonia program, under which the Commission has assumed a definite responsibility regarding professional education and information. The Commission has, likewise, participated both in planning and conducting formal and informal presentations on pneumonia therapy and other aspects of this disease.

A preliminary tabulation of the reports received by the State Department of Health during the first eight months of the Pneumonia Control Program shows a total of 248 cases of lobar pneumonia rendered aid in the treatment of their illness by specific drugs and sera distributed to medically indigent patients. In addition, 90 cases of broncho pneumonia were, also, included in the program. One thousand two hundred and fifty-three laboratory examinations were performed on 208 of these patients. The cost of laboratory service in accordance with the fee schedule allowed the cooperating laboratories resulted in an average cost of \$5.53 per patient

for all tests performed. The reported results of the treatment of the 248 cases of lobar pneumonia showed 224 of these patients to have recovered and 24 to have died, resulting in a case fatality rate of 9.7 per cent for the series. In comparison with a conservative expectation of a case fatality rate of 25 per cent in lobar pneumonia without specific therapy, the results attained through the pneumonia program appear, indeed, favorable. It is planned by the Commission and the State Department of Health to present a more detailed analysis of the results of the cases included in the program at a later date when a larger series of observations will permit a reliable interpretation in regard to specific factors, which might affect mortality from this illness.

The cooperation of the laboratories participating in the program has, in general, been excellent and much of the credit for the success thus far attained has been due to their work. Forty laboratories participated in the plan during the year. In six localities, however, few if any requests were made to the stations for service to indigent patients by physicians in those areas. It is believed that failure on the part of the physicians to understand the nature of the program and the services which it provides has been responsible for the failure of the general plan in these localities.

In summary it seems apparent that the value of the special pneumonia activities jointly sponsored by the Commission and the State Department of Health has been definitely established. It can be as readily recognized, however, that a more extensive application of the activities and services of the program must be effected if the general mortality from pneumonia throughout the State is to be materially influenced. Toward this objective shared equally by the Commission and the State Department of Health are the following recommendations presented:

1. That a qualified public health physician be employed to devote his major time to the direction and expansion of the present pneumonia program.

2. That more intensive efforts toward lay and professional education regarding lobar pneumonia be undertaken by the local societies and the local departments of health.

State Board of Nurses' Examiners (pages 545-6)—

Dr. Peple, chairman, elaborated on some of the points in his report, which was then adopted.

Syphilis Control—Dr. Kimbrough, chairman, presented the following report in sections:

Report of Syphilis Control Committee

1. Because of the developments in dealing with the problem of evaluating laboratories for serodiagnostic tests in connection with the premarital examination law, we recommend the appointment of a Committee for the Study of Clinical Laboratories in Virginia.

2. Recognizing the urgent need for further educational work in the diagnosis, clinical management and treatment of cases of syphilis, this committee requests authority to serve in an editorial capacity to abstract literature and publish a column in the MONTHLY limited to one page.

3. After consideration and study of the subject of prenatal examination laws, this committee believes that every educational measure possible should be employed to impress physicians and prospective mothers of the importance of serologic tests in pregnancy. We believe that education rather than legislation is best at this time.

4. This committee has been in close cooperation with the State Health Department in their syphilis work and is pleased to add their report for publication.

The first and third sections were adopted as read. The second section was amended to read:

2. Recognizing the urgent need for further educational

work in the diagnosis, clinical management and treatment of cases of syphilis, this committee requests authority to confer with the editor of the VIRGINIA MEDICAL MONTHLY with regard to abstracting literature and publishing it in the MONTHLY, the space to be limited to one page.

The report was then adopted as amended.

Supplementary Report from Division of Venereal Disease Control, State Department of Health

At the end of the fiscal year, there were 108 clinics holding 184 weekly sessions in the State. During the year, eleven new clinics were added and ten were dropped because they did not meet the minimal requirements or because the venereal disease problem in the area they served had decreased to the point where it was not considered administratively worth while to continue them.

Considerable attention was given to the improvement of treatment and diagnostic standards in the clinics through field visits and consultations. Three hundred and fourteen physicians served as clinicians during the past year. Through the State Department of Health clinic subsidy plan, honoraria were granted to these physicians in the amount of \$36,037.

Free drugs were distributed to clinics and physicians of the State for the treatment of cases of syphilis in the amount of \$46,292.60, a total of 775,483 doses which would render minimal adequate treatment of 20 arsenical and 20 heavy metals to approximately 18,800 individuals.

The educational program of the laity was conducted through public addresses, silent and sound motion pictures, and the distribution of bulletins and folders concerning syphilis and gonorrhea. The Division continued its policy of rendering consultation service to private physicians of the State and of releasing timely and current information on therapeutics and diagnosis. All physicians were circularized with venereal disease supplements on treatment and diagnostic procedures in syphilis. They were supplied with a brochure on the new legislation requiring a serologic examination before marriage, and a list of the approved laboratories. An outline of treatment procedure was prepared by the Syphilis Committee of the State Medical Society for use in clinics.

The morbidity reporting system was revised to meet the minimal standards as recommended by the U. S. Public Health Service and the Cooperative Clinical Group's committee on nomenclature. Reports from physicians were requested by name and classified diagnosis.

A system of mechanical tabulation of records was installed in December, 1940. This system became necessary as the volume of records to be tabulated and filed increased from approximately 20,000 a year to 210,000.

On August 1, 1940, the premarital examination law for venereal disease became effective. Though it placed a great burden on the laboratory and on the clerical staff of the Division of Venereal Disease Control who handle the reports, a great deal of good has been accomplished. It has been of positive value in the improvement achieved in the performance of serodiagnostic tests as shown in the evaluation studies described above. It has been of educational value and given many individuals the assurance that they and their marital partners are free of syphilis. In cases of individuals found infected before marrying, both parties have been informed of the fact and instructed concerning the importance of treatment to themselves and their future offspring. This point is particularly important for females in the child-bearing age group, for without such information many of those who were infected would bear congenitally maimed and crippled children.

A brief statistical analysis of the marriage examination law for the first eleven months from August 1, 1940, through June 30, 1941, reveals that there were a total of 52,853 persons examined and of this number

1,894 were infected with syphilis, or 3.6 per cent. Of this number 38,434 residents were examined and of these 1,718 or 4.5 per cent were found to be infected with syphilis. Of the 14,718 non-residents 176 or 1.2 per cent were found to be infected. In this analysis the rate for white individuals was .9 per cent and the rate for colored was 13 per cent.

Reports of the Bureau of Vital Statistics show that the number of white marriages, 17,412 in 1930, increased roughly in proportion to the State's increase in population until 1937. In that year, however, the number of white marriages jumped from 22,417 to 24,834, an increase of 2,417. In 1938, as more states on the Eastern Seaboard passed laws requiring premarital examinations, the total rose to 26,225 but the real influence of outside restrictions on hasty marriages was felt in 1939, when adoption of a forty-eight-hour waiting law in Maryland made Virginia the rush-marriage center for the Eastern states. That year, the number of white marriages, chiefly on account of persons from out-of-state, rose to 42,002. From the past fiscal year figures in marriages (37,712), it can be concluded that the examination act did not seriously reduce the normal number of marriages by natives.

On October 1, 1940, a new program, to have all men rejected because of syphilis by the selective service examining boards brought to treatment, was inaugurated. Since then the Division has handled over 46,000 records of laboratory reports of serologic tests for the local medical examiners, sent, at monthly intervals, lists of infected individuals to local health authorities for their investigation, and later recorded reports of the results of the investigations received from local areas.

Based on preliminary analysis, after eight months' experience with the program, 41,229 individuals have been given serologic tests. Approximately 4,039 of these were reported as positive and placed under suspicion of being infected with syphilis. They must be located and rechecked to establish their status as to infection. At the end of June, 1941, over 50 per cent of them had been investigated and placed under treatment.

In December, 1940, and January, 1941, a second study of the performance of serodiagnostic tests for syphilis was conducted by this Division in cooperation with the Department's laboratory. Under the terms of the premarital examination act, laboratories must be approved by the State Department of Health to perform such tests. Approval is based on the demonstration of a satisfactory sensitivity and specificity rating. In the first study in May, 1940, only thirty laboratories participated and the ratings were so low that the second study was made within a year. Fifty-four laboratories were evaluated in the two studies and thirty-six were approved.

In cooperation with the Bureau of Industrial Hygiene and Laboratories, surveys were made of the knitting and woolen mills of Orange County and of certain industries in Albemarle County. Each of these surveys was preceded by educational programs, utilizing talking motion pictures, printed bulletins, posters, and talks in an attempt to achieve voluntary cooperation of the employees. As a result of this work, each of these industries now requires serologic examinations as a prerequisite to employment.

A system has been designed for the field investigation of cases reported through the marriage examination law and the selective service program. Letters are sent to individuals infected with syphilis or gonorrhea and to suspect cases of syphilis, requesting them to report to their family physician for examination. In the event that they do not respond to the letters, a field visit is made, and if this fails to accomplish the desired results, legal steps are taken.

Tuberculosis (pages 546-7)—Adopted.

Advisory Board to State Department of Health—
No report.

Cancer Committee (page 547)—Adopted.

Industrial Health (page 547)—Adopted.

Virginia Welfare Council (pages 547-8)—Adopted.

Delegates to American Medical Association (pages 548-9)—Adopted.

Dr. Dean Cole then gave an account of the Special Fund set up for the work of his committee, which showed receipts as \$2,803.00 and disbursements \$1,270.51, leaving a balance of \$1,532.49. This was approved.

Under new business, the following motion was presented by Dr. M. S. Fitchett from the Norfolk County Medical Society:

The Norfolk County Medical Society has instructed its delegates to present the following resolution:

Whereas, The circumstances and conditions of the present time have greatly increased the functions and importance of the office of Coroner in all the localities of the State, and,

Whereas, The Coroner is at present a representative of the Medical profession, and,

Whereas, The duties of the Coroner as exercised at present are in a large part legal, rather than medical, and,

Whereas, The findings of the Coroner constitute an important factor in the reliability of our Vital Statistics, and,

Whereas, The laws of this State appear to be vague, indefinite and inconclusive as to the regulation of the Coroner's duties, and obsolete and inadequate to provide a service satisfactory to the needs of the State, the public and the Science of Medicine; therefore,

Be it resolved, That the Medical Society of Virginia, through its Legislative Committee, is urged to consider the present State laws relating to the Office of Coroner in the light of the facts set forth in this preamble and if they find it desirable and advisable, to present to the next meeting of the State Legislature such changes and additions to the law as they see fit.

This was adopted.

Dr. W. B. Porter stated that at a recent meeting of the Richmond Academy of Medicine, motion was adopted inviting the Southern Medical Association to hold its 1942 meeting in Richmond. He thought it might be well for the State Society to concur in this invitation, the President to write a letter. Adopted.

The House then adjourned to meet again the following day at 10:30 a. m.

October 7, 1941

The second meeting of the House of Delegates was held on Tuesday, October 7th, at 10:30 a. m., with the President, Dr. W. B. Martin, presiding.

There being a quorum present, the first business was the consideration of the changes in the Constitution and By-Laws, as presented at the previous meeting. It was moved and carried that these be adopted.

The Nominating Committee then presented the following slate, which was unanimously adopted:

President-Elect—Dr. J. M. Emmett, Clifton Forge.

Vice-Presidents—Dr. J. W. Anderson, Norfolk.

Dr. E. G. Scott, Lynchburg.

Dr. J. P. Williams, Richlands.

Secretary-Treasurer—Miss Agnes Edwards, Richmond.

Councilors from the odd numbered districts were re-elected as follows:

1st—Dr. Griffin W. Holland, Eastville.

3rd—Dr. J. M. Hutcheson, Richmond.

5th—Dr. W. C. Akers, Stuart.

7th—Dr. A. F. Robertson, Jr., Staunton.

9th—Dr. C. B. Bowyer, Stonega.

Drs. W. B. Martin, Norfolk, and Carrington Williams, Richmond, were elected delegates to the American Medical Association for a term of two and one years, respectively, and Drs. R. W. Miller, Richmond, and J. M. Emmett, Clifton Forge, as alternates for two and one years, respectively.

Dr. Dean Cole asked that the members of the House of Delegates contact the members of the Legislature and urge them to support the Medical Practice Act.

The Roanoke Academy of Medicine extended an invitation for the Society to hold its 1942 meeting in Roanoke, and this was unanimously accepted.

Dr. Paul Q. Daniel presented the following resolution:

Certain demands having been made by the United Mine Workers of America on the doctors doing industrial practice in the coal fields, I move the matter be referred to the Committee on Medical Economics for investigation and report to the mid-winter meeting of the Council.

This was adopted.

Dr. Wyndham Blanton moved that the Society express appreciation for the splendid work and entertainment by the Norfolk County Medical Society, the Princess Anne County Medical Society, and especially to Dr. Duncan as general chairman.

A vote of thanks was also extended to Dr. Martin for the efficient way in which he handled the business and general sessions of this meeting.

It was announced that a committee had been selected to judge the scientific exhibits. The chairman was Dr. George Lawson, with Drs. W. B. Porter and E. P. Lehman as the other members.*

Dr. Powell Williams stated that the Richmond Academy of Medicine had asked him to bring to the attention of the House of Delegates the matter of a health museum which could be taken around the State to educate the laymen. He moved that the Society appoint a committee on education to cooperate with the Academy of Medicine, Medical College of Virginia, University of Virginia, and State Department of Health to look into the feasibility of having such a museum. This was seconded and adopted.

There being no further business, the meeting adjourned.

Called Meeting

There was a called meeting of the House of Delegates on October 7th, immediately after the morning session, at which time the following names were nominated to be presented to the Governor for reappointment as members of the State Board of Medical Examiners:

Dr. R. D. Bates, Newtown.

Dr. P. St. L. Moncure, Norfolk.

Dr. H. U. Stephenson, Richmond.

Dr. W. B. McIlwaine, Petersburg.

Dr. I. C. Harrison, Danville.

*It was later announced that the exhibit of Dr. E. E. Barksdale, Danville, on "Arsenic in Tobacco" was the one selected by the Committee.

Dr. J. W. Preston, Roanoke.
 Dr. P. W. Boyd, Winchester.
 Dr. Lewis Holladay, Orange.
 Dr. F. H. Smith, Abingdon.

This was adopted, following which the meeting adjourned.

AGNES V. EDWARDS,

Approved:

Secretary.

WALTER B. MARTIN,

President.

Auditor's Report

October 1, 1940—September 30, 1941

THE OFFICERS AND COUNCILORS,
 MEDICAL SOCIETY OF VIRGINIA,
 RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of account of the Medical Society of Virginia for its fiscal year ended September 30, 1941, and submit herewith our report thereon, consisting of the following statements and related comments:

"A" Balance Sheet.

"B" Statement of Income and Expense.

"C" Receipts and Disbursements—Trust Funds.

Comments

The assets, liabilities, and surplus of the Society at September 30, 1941, are stated in the Balance Sheet, Exhibit "A". These are summarized below in comparison with the financial condition at September 30, 1940.

ASSETS:	9-30-41	9-30-40
Cash	\$19,319.07	\$14,476.02
Accounts Receivable	1,255.94	1,508.56
U. S. Savings Bonds—At Cost	2,400.00	2,400.00
TOTALS	\$22,975.01	\$18,384.58
LIABILITIES AND RESERVE:	9-30-41	9-30-40
Accounts Payable	\$ 688.70	\$ 530.27
Reserve for Trust Funds Held	2,350.71	—0—
TOTALS	\$ 3,039.41	\$ 530.27
SURPLUS—GENERAL FUND:		
Excess of assets over liabilities	19,935.60	17,854.31
	\$22,975.01	\$18,384.58

The Income and Expenses for the fiscal year ended September 30, 1941, are detailed in Exhibit "B", prepared on cash receipts and disbursements basis. The operations for both the current and preceding year are shown in condensed form as follows:

	YEAR ENDED	
	9-30-41	9-30-40
INCOME:		
Medical Society	\$ 5,522.12	\$ 5,538.85
Medical Monthly Publication	11,657.06	11,826.45
TOTALS	\$17,179.18	\$17,365.30
EXPENSES:		
Medical Society	\$ 5,302.46	\$ 5,086.10
Medical Monthly Publication	9,384.38	9,605.73
TOTALS	\$14,686.84	\$14,691.83
SURPLUS INCOME FOR YEAR	\$ 2,492.34	\$ 2,673.47

Attention is directed to the fact that while \$600.00 was appropriated for convention expenses only \$64.30 was actually disbursed for that purpose during the current year. This results from holding the 1940 convention during July of that year. The expenses incident to the 1941

convention will not be known until after the meeting has been held during the month of October, 1941.

The receipts and disbursements for the special Assessment Fund and the Commercial Exhibits Fund have been kept separate on the Treasurer's books and these are shown in Exhibit "C" of our report.

The depositaries and balances therein as of September 30, 1941, are listed below:

First and Merchants National Bank:

Checking Account	\$ 6,674.54
Savings Account	4,278.71
	\$10,953.25

Morris Plan Bank of Virginia:

Savings Account	5,353.32
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Southern Bank & Trust Company:

Savings Account	3,012.50
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TOTAL \$19,319.07

Balances Held are for Account of:

General Fund	\$16,968.36
Trust Funds	2,350.71
	\$19,319.07

The United States Savings Bonds owned are described below:

COST	VALUE 9-30-41	VALUE AT MATURITY	DATE OF MATURITY
\$ 525.00	\$ 588.00	\$ 700.00	February, 1946
1,500.00	1,540.00	2,000.00	October, 1949
375.00	380.00	500.00	March, 1950
\$2,400.00	\$2,508.00	\$3,200.00	

Insurance protection carried as shown by policies examined was as follows:

Office Furniture and Fixtures	\$1,000.00
Walter Reed Home, Belroi, Va.	1,000.00
Surety Bond—Secretary-Treasurer	2,500.00

Accounts Receivable for membership dues, advertising, and subscriptions to the medical monthly publication are stated at collectible value as estimated by the Executive Secretary-Treasurer.

All receipts of record were accounted for by bank deposits and disbursements were supported by satisfactory vouchers. Balances on deposit at the close of the year were independently confirmed and bonds owned were verified by inspection. The bookkeeping records were found to have been kept in a satisfactory manner.

Respectfully submitted,

SHEPHERD, JACKSON & WIGGINS,

Certified Public Accountants.

Balance Sheet—September 30, 1941

Exhibit "A"

CASH:	ASSETS
General Fund (Exhibit "B")	\$16,968.36
Trust Funds (Exhibit "C")	2,350.71
	\$19,319.07

DUE FROM MEMBERS:

(Estimated Collectible Value)

1941 Dues—155 @ \$5.00 each 775.00

ACCOUNTS RECEIVABLE:

VIRGINIA MEDICAL MONTHLY:

For Advertising \$ 456.94

For Subscriptions (Estimated) 24.00

480.94

SECURITIES:

United States Savings Bonds— (Current Redemption Value \$2,508.00) At Cost	2,400.00
TOTAL ASSETS	<u>\$22,975.01</u>

LIABILITIES AND SURPLUS

ACCOUNTS PAYABLE:

For Preparation of MEDICAL JOURNAL—September, 1941 Issue .. \$	498.11
For Printing and Supplies	167.49
For Social Security Tax	23.10
	<u>\$ 688.70</u>

RESERVE FOR TRUST FUNDS HELD:

Unexpended Cash Balances	2,350.71
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SURPLUS—GENERAL FUND:

Excess of Assets over Liabilities	19,935.60
TOTAL LIABILITIES AND SURPLUS ..	<u>\$22,975.01</u>

**Statement of Income and Expense
Fiscal Year Ended September 30, 1941
Exhibit "B"**

MEDICAL SOCIETY OF VIRGINIA DIVISION

INCOME:	ACTUAL	BUDGET
Dues—From Members	\$ 5,240.35	
Royalties on History of Medicine (Net)	41.00	
Refunds for Department of Clinical and Medical Education	166.26	
Interest on Savings Accounts (½) ..	74.51	
TOTAL	<u>\$ 5,522.12</u>	

EXPENSES:

Salaries (Apportioned):		
Secretary-Treasurer \$1,800.00		
Clerical Assistance - 990.00		
	<u>\$ 2,790.00</u>	<u>\$ 2,790.00</u>
Office Rent and Telephone	360.55	365.00
Stationery and Office Supplies	54.46	75.00
Repairs and Replacements	41.76	40.00
Postage	201.16	225.00
Audit Fee (½)	30.00	30.00
Social Security Tax (½)	22.80	23.10
Miscellaneous Expenses	110.09	125.00
President's Expenses	65.42	100.00
President-Elect's Expenses	—	50.00
Councilors and Officer's Expenses ..	28.50	75.00
Delegates to A.M.A. Convention	87.20	100.00
Department of Clinical and Medical Education	1,286.55	1,286.55
Walter Reed Commission	11.50	75.00
Convention Expenses (See Comments) ..	64.30	600.00
Appropriations to Committees:		
Scientific Exhibits	47.25	200.00
Medical Economics	13.49	75.00
Child Welfare	4.68	10.00
Maternal Health	4.00	10.00
Cancer	18.48	20.00
Medical Preparedness	60.27	75.00
TOTALS	<u>\$ 5,302.46</u>	<u>\$ 6,349.65</u>
SURPLUS INCOME FOR YEAR	<u>\$ 219.66</u>	

VIRGINIA MEDICAL MONTHLY DIVISION

INCOME:	ACTUAL	BUDGET
Advertising	\$ 7,755.38	
Subscriptions:		
Members	3,494.90	
Non-Members	332.27	
Interest on Savings Accounts (½)	74.51	
TOTAL	<u>\$11,657.06</u>	

EXPENSES:

Salaries (Apportioned):		
Secretary-Treasurer \$1,800.00		
Clerical Assistance - 990.00		
	<u>\$ 2,790.00</u>	<u>\$ 2,790.00</u>
Preparation of JOURNAL (Including Cost of Distribution)	6,067.84	6,500.00
Office Rent and Telephone	354.11	365.00
Stationery and Office Supplies	33.61	30.00
Repairs and Replacements	41.75	40.00
Office Postage	28.58	50.00
Audit Fee (½)	30.00	30.00
Social Security Tax (½)	22.80	23.10
Miscellaneous Expense	15.69	20.00
TOTALS	<u>\$ 9,384.38</u>	<u>\$ 9,848.10</u>
SURPLUS INCOME FOR YEAR	<u>\$ 2,272.68</u>	

SUMMARY OF OPERATIONS

DIVISION	ACTUAL INCOME	ACTUAL EXPENSES	SURPLUS INCOME
Medical Society	\$ 5,522.12	\$ 5,302.46	\$ 219.66
Medical Journal	11,657.06	9,384.38	2,272.68
TOTALS	<u>\$17,179.18</u>	<u>\$14,686.84</u>	<u>\$ 2,492.34</u>

RECONCILIATION OF CASH BALANCE:

Balance—October 1, 1940	\$14,476.02
Add: Surplus Income for Year	2,492.34
BALANCE—SEPTEMBER 30, 1941	<u>\$16,968.36</u>

**Trust Funds—Receipts and Disbursements
Fiscal Year Ended September 30, 1941
Exhibit "C"**

SPECIAL ASSESSMENT FUND:

Receipts:	
From Members	\$2,803.00
Disbursements:	
Professional Services (Attorneys)	\$1,231.75
Miscellaneous Expenses	38.76
	<u>1,270.51</u>
BALANCE—SEPTEMBER 30, 1941	<u>\$1,532.49</u>

COMMERCIAL EXHIBITS FUND:

Receipts:	
For Exhibits Space	\$ 836.67
Disbursements:	
Miscellaneous Expenses	18.45
BALANCE—SEPTEMBER 30, 1941	<u>818.22</u>
TOTAL CASH BALANCE—SEPTEMBER 30, 1941 ..	<u>\$2,350.71</u>

Medico-Legal Medicine

CORONERS

A Resolution of the Norfolk County Medical Society referred to the Virginia Beach meeting of the Medical Society of Virginia and adopted.

WHEREAS: The circumstances and conditions of the present time have greatly increased the functions and importance of the office of Coroner in all the localities of the State, and,

WHEREAS: The Coroner is at present a representative of the Medical profession, and,

WHEREAS: The duties of the Coroner as exercised at present are in a large part legal, rather than medical, and,

WHEREAS: The findings of the Coroner constitute an important factor in the reliability of our Vital Statistics, and,

WHEREAS: The laws of this State appear to be vague, indefinite and inconclusive as to the regulation of the Coroner's duties, and obsolete and inadequate to provide a service satisfactory to the needs of the State, the public and the Science of Medicine; therefore,

BE IT RESOLVED: That the Medical Society of Virginia through its legislative committee, is urged to consider the present State laws relating to the Office of Coroner in the light of the facts set forth in this preamble and if they find it desirable and advisable, to present to the next meeting of the State Legislature such changes and additions to the law as they see fit.

*Presented by DR. M. S. FITCHETT,
Delegate, Norfolk County Medical Society.*

A Letter from the General Director of Laboratories of New York City, Dr. Douglas Symmers, dated October 27, 1941.

DEAR SIR:

Its fine to hear that Virginia is contemplating the abolition of the iniquitous institution of the coroner and the substitution of the office of the medical examiner. The former has no redeeming features and the latter, in places, could be improved.

The first office of the medical examiner was created in Massachusetts in 1877 as a result of a particularly atrocious crime and subsequent miscarriage of justice, the details of which I have forgotten. In Massachusetts the office is functioning excellently well, especially in Boston where it is divided into two parts—one part was, until his recent death, in charge of Dr. George B. Magrath, the other is in charge of Dr. Timothy Leary. These men succeeded in giving the City of Boston a system of medical investigation of crime and violence which the rest of the country would do well to emulate.

In New York City the office of the chief medical examiner was established after a long, arduous fight by Leonard Wallstein, at that time Commissioner of Accounts in the Mitchell Reform Administration, and a civic organization known as the City Club. Otto Schultz, Norris and myself helped as much as we could. I mention this latter point to introduce the fact that not a single medical organization in the City of New York, including the Academy of Medicine and the County Medical Society, lifted a finger to bring about the removal of the coroner, and also to express the hope that similarly powerful medical organizations in Virginia may adopt a more cooperative and belligerent attitude in the fight which, I assume, is bound to come and which, I suspect, will be a hard one.

In New York City the office is functioning well. The town is divided into five boroughs and each has its own morgue where autopsies are done by pathologists assigned to and usually living in that particular borough. The latter also do "tour duty", that is, they visit the scene and determine what shall be done in the way of medical investigation. All of the toxicological work for the five boroughs is done in the laboratories at Bellevue Hospital by Gettler and it is done splendidly. Gonzales is the Chief Medical Examiner.

There is also an office of the chief medical examiner in Newark, New Jersey. It is headed by Martland whose headquarters are at the Newark City Hospital. I am not very well acquainted with Martland's office nor with his staff. Martland himself is an excellent pathologist and the sort of man who would be the first to point out the weak points in his own organization in order that they might be avoided or strengthened for the benefit of a newly proposed organization elsewhere such as yours.

The fourth medical examiner's office is conducted by Dr. Theodore J. Curphey in Mineola, Long Island. I have never visited Curphey's office but I know him well and he is highly competent. I rather suspect that conditions in his district would more nearly correspond to those in Richmond and its immediate vicinity than to those in New York City, Boston, etc.

The following is an outline of the program which was followed in New York City to abolish the

coroner and substitute the medical examiner's system:

1. The coroner's office was officially investigated by the Commissioner of Accounts for the City of New York.

2. We plowed through hundreds, perhaps I should say one or two thousand, coroners' reports and separated them into various categories indicating criminal negligence, inefficiency of various coroners and coroner's physicians, falsification of records, obvious homicides overlooked, etc., etc., the whole representing a huge mass of evidence of an indescribably atrocious sort. It required about six months to investigate these records.

3. The Commissioner of Accounts, who was invested with certain quasi-judicial powers including the right to subpoena and cross-examine witnesses, then conducted an open hearing which lasted for several weeks and during which all sorts of incriminating evidence was put into the record.

4. In 1915 a bill was drafted which proposed to abolish the coroner's system in New York City and to substitute the medical examiner. It was introduced at Albany and met with violent opposition but was passed to go into effect three years later. The latter was a sort of political compromise.

The hearings conducted by the Commissioner of Accounts were highly sensational and the press assigned its crack reporters to cover them. Nevertheless both the lay and medical public were strangely apathetic and even to this day there are practicing physicians in New York City who do not know that the office of the coroner has been abolished! They still think that the title of medical examiner may be correctly used synonymously with that of the coroner. However, the several district attorneys know the difference.

The medical examiner's office, in my opinion, which is based on experience and observations of a good many years *in New York City*, should function independently. It should have its own institute of pathology and toxicology and its own staff of experts headed by a chief medical examiner. It should not be tied up with any school of medicine. My reasons for this latter statement are too numerous to be put down in this letter. Nevertheless, I will cite two: The position of toxicologist in a medical examiner's office is a full-time job with a good deal added. It must be filled by a pure toxicologist. A professor of chemistry will not suffice. He usually knows little or nothing of toxicology, which is a life's study by itself, and it is a physical and mental impossibility for him to preside over two busy departments and do justice to both. Precisely the same applies to the

pathologist. Medico-legal pathology is an entirely different field from general pathology. The professor of pathology usually knows little or nothing of the intricacies of medico-legal work and it is likewise a physical and mental impossibility for him to administer two departments, teach in one and go to court from the other, etc., and still keep out of trouble. Medico-legal work may and often does have to do with a man's incarceration or his death by legal methods. One cannot and must not make a mistake in this field of medicine. *Only God knows how many crimes have been committed against the innocent and how often the guilty have escaped through the incompetence of the medico-legal "experts"*. The medical schools are set apart for teaching, and the medical examiner's office is set apart for the investigation of death in unusual or suspicious circumstances. The Admirable Crichton of medicine has yet to be born who could acquire enough knowledge to cover these fields efficiently. On the other hand, I feel that the medical examiner should do everything possible to promote the interests and advancement of medical education but in that capacity he should act as a free agent—dominated by no person or group of persons. It can be done.

I am not at all so certain that a half-baked medical examiner's office is very much of an improvement over the institution of the coroner. Again this opinion is based on experience gained in New York City. It may be that conditions are entirely different in the City of Richmond. I cannot, of course, speak for the smaller towns in Virginia. In one or two of the smaller towns in New York State I have known good medico-legal work to be done by practitioners of medicine but these men are not subject to the distractions of teaching and seem to be able to "discount" the distractions of the practice of medicine and, also, they have comparatively few medico-legal cases to handle. I am unable to say what they do in the event that abstruse toxicological problems arise, such as the search for the lesser or almost unknown alkaloids and the like.

Now let me turn to far less restricted localities than the State of Virginia or the City of New York. There is a Captain Maurice Powers of the Royal Canadian Mounted Police whose headquarters are in Alberta, in the Province of Saskatchewan. He is a medico-legal expert who covers a vast territory. He was trained at Bellevue under Gettler, Gonzales

and others. He has a small laboratory building at Alberta. There he receives specimens from various parts of the Canadian Northwest. He knows enough about pathology and toxicology to do a very good job indeed. Whenever necessary he flies five hundred or a thousand miles to the scene of a death by violence. The autopsy, however, is done by the local coroner who has no connection with the Mounted Police. But Powers has enough authority to see or do enough of the autopsy for court purposes. Otherwise, the court must take the coroner's word for it. While Powers' work is not entirely comparable to that of the medical examiner in Richmond or in New York, it at least shows what one man can do in an almost unlimited geographical expanse to help the Mounted Police "get their man". In the Canadian Northwest they seldom resort to the lesser known poisons for suicidal or homicidal purposes—their methods are more direct and to the point. If Canada can do it, why not Virginia?

I am giving you this sketch on the assumption that you and your colleagues have had more experience with the institution of coroner than you have had with the system of the medical examiner. It comes close to one of my life's interests when I hear that any community is determined to improve its medico-legal status by doing away with the coroner. I should like to have a part in the proposed rearrangement in Virginia, no matter how small, and I want you to feel that it would be granting me a privilege if you should allow me to help in any way that might occur to you. Also, perhaps it would be a profitable venture if you yourself, for example, could arrange to visit Gonzales, Curphey, Martland and Leary and see things with your own eyes. I feel sure that all of them would welcome you warmly or any one else crusading in such a worthy cause, and that they would show you anything worth showing, good and bad alike.

Very sincerely yours,

DOUGLAS SYMMERS, M.D.
General Director of Laboratories.

Laws in Virginia in Relation to the Office of Coroner—From "The Virginia Code of 1936"

CHAPTER 190

CORONERS' INQUESTS

4806: *Coroner to be notified of any sudden, violent, unnatural, or suspicious death, or death without medical attendance.*

It shall be the duty of the physician, undertaker, or other person in attendance, to notify the coroner of any sudden, violent, unnatural, or suspicious death, or a death without medical attendance, and upon notice of such a death, the coroner of the City of Richmond, if the dead body be in the penitentiary, and in any other case the coroner of the county or corporation in which the dead body is, shall view the body and make inquiry into the circumstances of the said death, and after an inquiry had, as aforesaid, if facts are revealed sufficient to create in the mind of the said coroner a reasonable belief that the person whose body he shall have been called to view came to his or her death by murder or manslaughter, or by the contrivance, aiding, procuring, or other misconduct of any person or persons, he shall fix a time and place for a hearing to determine when, how, and by what means the said person came to his death; provided, however, no such hearing shall be held unless and until the same be requested by either the Commonwealth's attorney, or the judge of the circuit or corporation court, of the county or corporation wherein such dead body be. (Code 1887, # 3938; 1910, p. 338; 1924, p. 499; 1926, p. 461; 1934, p. 508.)

4807: *Summons to witnesses:*

4808: *How warrant and summons executed:*

4809: (Repealed by acts 1926, p. 461.)

4810: *How witnesses compelled to attend; how their evidence taken:*

4811: *Inquisition; its form:*

4812: *Inquisition, evidence, et cetera, to be returned to court, witnesses to be recognized:*

4813: *Warrant for arrest of accused, by whom issued and how returnable:*

4814: *How burial of deceased and expense of coroners proceedings shall be paid:*

If the dead person be a stranger, whether an inquest be taken, or the coroner called to view the body think it unnecessary to have an inquest, he shall cause the body to be decently buried. If the coroner certify that he believes the deceased has not sufficient estate, in this State, to pay the expenses of the burial, they shall, when allowed by the court of the coroner's county or corporation, be paid out of the treasury. If the deceased has estate out of which the burial expenses can be paid, or any part thereof, then such estate shall be taken for such purpose. If the deceased be not a stranger

and no other person causes the body to be buried, the coroner, whether an inquest be taken or not, shall cause the body to be decently buried; and if there is sufficient estate of the deceased to pay the burial expenses, or any part thereof, then such estate shall be taken for such purpose; but if there be no such estate then such burial expense shall be paid out of the treasury of the county or corporation of which the deceased was a resident at the time of his death. If the deceased be a stranger the expense of the coroner's proceedings shall be paid out of the State treasury, and if not a stranger, out of the treasury of the county or corporation of which he was a resident at the time of his death. No expense incurred either for burial or for the coroner's proceedings shall be paid until allowed by the court of the coroner's county or corporation to which his return is properly to be made, except in cities having a city manager form of government it shall not be necessary to have any expense account herein mentioned, payable out of the city treasury, presented to the court for allowance.

Jurors who serve on a coroner's inquest shall be allowed one dollar and a half for each day he shall serve as such. (Code 1887, # 3946; 1924, p. 499.)

4815: *Coroner may require physicians to attend inquest; their pay.*

4816: *Penalty on coroner for failure of duty; where no coroner, justice may act:*

4817: *Inquest may be taken on Sunday:*

4418: *Coroners fees:*

4818 a: *Disposition by coroner of money of deceased:*

Whenever any coroner in this State shall lawfully come into possession of any money or other personal property of any deceased person, and no person or persons entitled to such money or property by law are known, or can by reasonable diligence be ascertained, within two years from the date such money or property comes into possession of such coroner such money and/or personal property shall be turned over by such coroner having possession of the same to the sheriff or sergeant of his county or city, and such personal property shall be sold by such sheriff or sergeant at public auction after posting notices at three or more public places in said county or city for ten days or in

the discretion of such sheriff or sergeant by advertisement for ten days by one insertion in a newspaper published in or having general circulation in said city or county, and the proceeds thereof, together with any such money, after the payment of all necessary expenses, shall be paid by such sheriff or sergeant into the State treasury to the credit of the literary fund. (1932, p. 401.)

2815: *Coroners, how appointed and removed:*

The judge of each corporation court and of each circuit court of a county of a state shall, on the first day of January, nineteen hundred and twenty, and every four years thereafter, appoint for his city and for each county in his circuit, respectively, as the case may be, one physician, who shall be the coroner of such city or county, who shall qualify by law and serve until his successor is appointed and qualified. If the court shall be of the opinion that one coroner is not sufficient, it may appoint as many more as to it may seem proper.

Coroners may be removed from office as provided in section twenty-seven hundred and five for the removal of certain officers. (Code 1887, # 891; 1895-96, p. 696; 1902-3-4, 574; 1910, p. 344.)

2817: *When coroner may act in place of sheriff or sergeant:*

When there is no person acting in a county as sheriff or deputy sheriff thereof, or in a city as sergeant or deputy sergeant thereof, the coroner or coroners of such county or city shall perform all the duties pertaining to the office of sheriff or sergeant thereof, except such as relate to the collection of militia fines and officers' fees. And when for any cause it is unfit for a sheriff or sergeant to serve and process, or to summon a jury, such process may be directed to and served by, and such jury shall be summoned by a coroner of the county or city. (Code 1887, # 893.)

2818: *Bond of coroner:*

Before any coroner shall, under the preceding section, receive any money or serve any execution, the court of his county or city shall take from him a bond in such penalty as it may deem sufficient. (Code 1887, # 894.)

2819: *When constable may act in place of coroner; liabilities of coroners, constables, etc:*

Whatever act is, under section twenty-eight hun-

dred and seventeen, to be done by a coroner, shall, in case that office be vacant, or the coroner or coroners be interested or not authorized to act, be directed to, or done by, a constable of a county or city. If any coroner or constable fail in the proper performance of any duty prescribed by that section, or by this, like redress may be had against such coroner or constable, his sureties and his or their heirs, devisees or personal representatives, as could have been had against a sheriff or sergeant, his sureties, and his or their heirs, devisees, or personal representative, if such sheriff or sergeant had been guilty of such failure. (Code 1887, # 895.)

1727: *When coroner's permission necessary before embalming:*

It shall be unlawful to embalm a dead human body, when any fact within the knowledge, or brought to the attention of, the embalmer is sufficient to arouse suspicion of crime in connection with the cause of death of the deceased, until the permission of the coroner, or of a justice of the peace, if there be no coroner, has been first obtained. In any case where it is the duty of the coroner to view the body of a deceased person, it shall be unlawful to embalm the said body until the permission of the said coroner has first been obtained.

Any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than twenty-five nor more than one hundred dollars. (19304, p. 727; 1902-3-4, p. 85; 1924, p. 499.)

3487: *Sheriffs, sergeants, criers, coroners and constables: (Fees)*

3508: *To a sheriff, sergeant, coroner, crier, or constable (Fees)*

The Laws of New York 1915

CHAPTER 284

AN ACT to amend the Greater New York Charter, and repeal certain sections thereof and of Chapter four hundred and ten of the laws of eighteen hundred and eighty-two, in relation to the abolition of the Office of Coroner and the establishment of the Office of Chief Medical Examiner.

BECAME A LAW APRIL 14, 1915, WITH THE APPROVAL OF THE GOVERNOR. PASSED.

THREE-FIFTHS BEING PRESENT.

ACCEPTED BY THE CITY.

THE PEOPLE OF THE STATE OF NEW YORK, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

SECTION 1. The Office of Coroner in the City of New York shall be abolished on January first, nineteen hundred and eighteen, and after this section takes effect, a vacancy occurring in such an office in any Borough shall not be filled unless by reason of the occurrence thereof, there shall be no coroner in office in such borough, in which case the vacancy in such borough last occurring shall be filled for a term to expire on January first, nineteen hundred and eighteen. If, by reason of the provisions of this section, the number of coroners in a borough be reduced, the remaining coroner or coroners in such borough shall have the powers and perform the duties conferred or imposed by law on the board of coroners in such borough.

SECTION 2. Title four of chapter twenty-three, sections fifteen hundred and seventy and fifteen hundred and seventy-one of the Greater New York charter, as re-enacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one, is hereby repealed, and in its place is created the Office of Chief Medical Examiner.

This law was incorporated in the new New York City Charter and Administrative Code adopted at a general election November 3, 1936, to take effect January 1, 1938.

Chapter 39 Greater New York City Charter and Administrative Code.

ORGANIZATION OF OFFICE; CHIEF MEDICAL EXAMINER

SECTION 874. There is hereby established the office of Chief Medical Examiner of the City of New York, the head of which shall be called the Chief Medical Examiner who shall be appointed by the Mayor from the classified Civil Service and be a *doctor of medicine and a skilled pathologist and microscopist*.

The Mayor may remove the chief medical examiner upon stating in writing his reasons therefor, to be filed in the office of the Municipal Civil Service Commission and served upon such officer and allow-

ing him an opportunity of making a public explanation.

DEPUTIES AND EMPLOYEES

SECTION 875. The chief medical examiner may appoint and remove such deputies, assistant medical examiners, scientific experts and other officers and employees as may be provided for pursuant to law. *Such deputy chief medical examiners and assistant medical examiners shall possess the same qualifications as the chief medical examiner.*

OFFICE ALWAYS OPEN

SECTION 876. The office shall be kept open every day in the year including Sundays and legal holidays, with a clerk in attendance at all times during the day and night.

OATHS AND AFFIDAVITS

SECTION 877. The chief medical examiner and all deputy and assistant medical examiners may administer oaths and take affidavits, proofs and examinations as to any matter within the jurisdiction of the office.

VIOLENT AND SUSPICIOUS DEATHS: PROCEDURE

SECTION 878 (City Charter). When in the City of New York any person shall die of criminal violence, by casualty, by suicide, suddenly when in apparent health, when unattended by a physician, in prison or in any suspicious or unusual manner, the chief medical examiner shall have such powers and perform such duties as may be provided by law.

REPORT OF DEATHS: REMOVAL OF BODY

SECTION 878-1.0. It shall be the duty of any citizen who becomes aware of the death of any person occurring under the circumstances described in the above section 878 of the Charter to report such death forthwith to the office of the chief medical examiner and to a police officer who shall forthwith notify the officer in charge of the station house in the police precinct in which such person died.

Any person who shall wilfully neglect or refuse to report such a death or who without written order from a medical examiner shall wilfully touch, remove or disturb the body of any such person, or wilfully touch, remove or disturb the clothing, or any article upon or near such body, shall be guilty of a misdemeanor.

VIOLENT DEATHS AND PROCEDURE (continued)

SECTION 878-2.0. (a) Upon report of any such death by a citizen, the officer in charge of the station

house in the police precinct in which such person died shall immediately notify the office of the chief medical examiner of the known facts concerning the time, place, manner and circumstances of such death. Immediately upon receipt of such notification, the chief medical examiner, or a deputy or assistant medical examiner, shall go to and take charge of the dead body. Such examiner shall fully investigate the essential facts concerning the circumstances of the death, taking names and addresses of as many witnesses thereto as it may be practical to obtain, and before leaving the premises shall reduce all such facts to writing and file the same in his office (Office of Chief Medical Examiner). Such examiner shall take possession of any portable objects which, in his opinion, may be useful in establishing the cause of death, and deliver them to the Police Department.

(b) The police officer detailed in such cases shall, in the absence of the next of kin of the deceased person, take possession of all property of value found on such person, making an exact inventory thereof on his report, and deliver such property to the Police Department which shall surrender the same to the person entitled to its custody or possession.

(c) Nothing in this section contained shall affect the powers and duties of a public administrator.

AUTOPSIES: FINDINGS

SECTION 878-3.0. If the cause of death shall be established beyond a reasonable doubt, the medical examiner in charge shall so report to his office. If, however, in the opinion of such medical examiner, an autopsy is necessary, the same shall be performed by a medical examiner. A detailed description of the findings written during the progress of such autopsy and the conclusions drawn therefrom shall thereupon be filed in his office (Office of Chief Medical Examiner).

RECORDS

SECTION 879-1.0. It shall be the duty of the chief medical examiner to keep full and complete records in such form as may be provided by law. Such records shall be kept in the office of the chief medical examiner, properly indexed, stating the name, if known, of every person dying under the circumstances described in Section 878 of the Charter, the place where the body was found and the date of death. To the record of each case shall be attached the original report of the medical examiner and the detailed findings of the autopsy, if any. The office shall promptly deliver to the appropriate district

attorney copies of all records relating to every death as to which there is, in the judgment of the medical examiner in charge, any indication of criminality. All other records shall be open to public inspection as provided in Section 1545 of the State Laws of 1915. The appropriate district attorney and police commissioner of the City may require from the office of the chief medical examiner such further records and such daily information as they may deem necessary.

FEES FOR COPIES OF RECORDS

SECTION 879-2.0. Whenever the chief medical examiner shall furnish to any private individual a copy or transcript of any record or any photograph or photostat of such record, such chief medical examiner shall and is hereby authorized to charge fees as follows:

1. For each copy or photostat of medical examiner's report on cause of death---\$.50
2. For each copy or photostat of hospital report ----- .50
3. For each copy or photostat of autopsy report, per page or fraction thereof, but not to exceed \$2.50 for any single autopsy report ----- .50
4. For each copy or photostat of a police report ----- .15
5. For each copy of photostat of chemical laboratory report ----- .15

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Infant Nutrition. A textbook of Infant Feeding for Students and Practitioners of Medicine. By WILLIAM McKIM MARRIOTT, B. S., M. D., Late Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis. Revised by P. C. JEANS, A. B., M. D., Professor of Pediatrics, College of Medicine, State University of Iowa, Iowa City. Third Edition. St. Louis. The C. V. Mosby Company. 1941. 475 pages. Cloth. Price \$5.50.

Diseases of Women. By HARRY STURGEON CROSSEN, M. D., F.A.C.S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital, and St. Luke's Hospital; etc. and ROBERT JAMES CROSSEN, A. B., M. D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to

the Barnes Hospital and the St. Louis Maternity Hospital; etc. Ninth Edition, Entirely Revised and Reset. St. Louis. The C. V. Mosby Company. 1941. 948 pages. With eleven hundred twenty-seven engravings, including forty-five in color. Cloth. Price \$12.50.

Functional Pathology. By LEOPOLD LICHTWITZ, M. D., Chief of the Medical Division of the Montefiore Hospital; Clinical Professor of Medicine, Columbia University, New York. Grune and Stratton. New York. 1941. 570 pages. 198 illustrations, charts and tables. Cloth. Price \$8.75.

Nutritional Deficiencies. Diagnosis and Treatment. By JOHN B. YOUMANS, A. B., M. S., M. D., Associate Professor of Medicine and Director of Post-Graduate Instruction, Vanderbilt University Medical School, Nashville, Tennessee. Assisted by E. WHITE PATTON, M. D. Philadelphia. J. B. Lippincott Company. 1941. xii-385 pages. 16 Illustrations. Cloth. Price \$5.00.

Rheumatic Fever In New Haven. Edited by JOHN R. PAUL, M. D., Professor of Preventive Medicine, Yale University School of Medicine. The Science Press Printing Company. Lancaster, Pennsylvania. 1941. 176 pages. Price \$1.00.

The Treatment of Infantile Paralysis in The Acute Stage. By SISTER ELIZABETH KENNY of Australia. Bruce Publishing Company. Minneapolis and Saint Paul. 1941. xix-285 pages. Illustrated. Cloth. Price \$3.50.

Body Mechanics in Health And Disease. By JOEL E. GOLDTHWAIT, M. D., F. A. C. S., LL.D.; LLOYD T. BROWN, M. D., F.A.C.S., LORING T. SWAIM, M. D.; JOHN G. KUHN, M. D., F.A.C.S. With a Chapter on the Heart and Circulation as Related to Body Mechanics by WILLIAM J. KERR, M. D., F.A.C.P. Philadelphia. J. P. Lippincott Company. 1941. Third Edition. Completely Revised and Reset. Octavo of xiv-316 pages. 121 Illustrations. Cloth. Price \$5.00.

The problem of chronic disease together with the study of functional disorders in so-called healthy or near-healthy individuals has been adequately considered in this relatively short volume. The authors make no attempt completely to review the tremendous fields of chronic medicine and functional maladjustments, but wisely confine their work to a survey of the chief concerns of those two branches of medicine.

Beginning with a discussion of "The Problem of Chronic Medicine", the book goes on to outline the relation of body types and body mechanics to chronic diseases, both organic and functional. The various systems of the body are separately considered, and although the scheme of presentation is in outline, the discussions of each system are neither sketchy nor incomplete. A section of typical case histories is included, and the book is generously illustrated with diagrams and actual photographs. The book is well organized and is simply and lucidly written.

Emphasis is placed, throughout the entire volume,

on the maintenance of physical fitness and health, and the restoration of the physiologically correct state wherever possible. The author's approach is one of prevention primarily, and it is their belief that most chronic diseases are associated with a wrong use of the body, begun in childhood or in early adult life. Faulty body mechanics, they feel, are the underlying cause of many chronic deformities and diseases which might have been prevented by early and adequate attention.

The book as a whole is recommended and several chapters are worthy of perusal as separate entities. The chapter on "Developmental Deformities", that on "Body Mechanics", and the sections on "Treatment" and "Public-Health Aspects of Body Mechanics" are especially noted.

It is this writer's opinion that the chief value of the book is as an introduction to the subject and as a stimulus for further and more detailed study.

HAROLD I. NEMUTH.

Science and Seizures. New Light on Epilepsy and Migraine. By WILLIAM GORDON LENNOX, M.D., Sc.D. Hon., Assistant Professor of Neurology, Harvard University Medical School; Visiting Neurologist, Boston City Hospital; Secretary Harvard Epilepsy Commission, etc. Harper and Brothers. New York. 1941. Octavo of xiii-258 pages. With 10 illustrations. Cloth. Price \$2.00.

It is rather infrequent for one man to be so richly endowed with the multiple abilities that are necessary to write a book that is readable, instructive, and equally interesting to the physician, the patient, and the public in general. Such a man is Dr. William Gordon Lennox, of the Harvard Medical School and president of the International League Against Epilepsy, and such a book is *Science and Seizures* (New Light on Epilepsy and Migraine).

In 258 pages, written in newspaper style, Dr. Lennox reviews the subject of epilepsy and migraine from its various aspects—historically, physiologically, and therapeutically; discusses the new advances made by the electro-encephalographic studies of epilepsy and migraine, suggests a new terminology (cerebral dysrhythmias), presents extremely interesting statistics, particularly with reference to the genetics of epilepsy and migraine, and makes a plea for financial endowment to further research in the field of cerebral dysrhythmias.

This reviewer believes that the author has successfully fulfilled his aim in writing the book and that books of this type will, in the words of the author, help "to further intelligent cooperation between patients, physicians, and the public; to unite forces which strive to make men whole (against other forces which blow them to bits); to promote unity of good purpose and worthwhile accomplishment in a society filled with economic and social headaches and threatened with political epilepsy."

This book is not a textbook on the subject of epilepsy and is not a profound research treatise on the subject, but it was not intended to be either of these. Judged on the basis for which it was written, the book is highly recommended to the neuropsychiatrist, the general practitioner, the medical student, and the layman.

I. S. Z.

Necropsy. A Guide for Students of Anatomic Pathology. By BELA HALPERT, M.D., Assistant Professor of Pathology and Bacteriology, Louisiana State University School of Medicine, and Visiting Pathologist, Charity Hospital of Louisiana at New Orleans. St. Louis. The C. V. Mosby Company. 1941. 75 pages. Cloth. Price \$1.50.

Dr. Halpert gives a 75-page outline of the performance and recording of a necropsy according to the technique modified by him from that originally described by Anton Ghon. There is proper stress put upon the careful examination of organs in situ and the removal of organs in related groups so as to preserve their relations, blood supply and lymphatic drainage. The description of the technique is detailed but concise; in fact it is probably too concise for the use of students who are not already familiar with autopsy technique. The reviewer feels that the addition of a few simple line drawings as illustrations would increase the value of the book.

There are very complete and detailed lists of structures and appearances to be noted in each region and organ.

The book can be recommended to pathologists who are not already familiar with the technique outlined by Dr. Halpert. It should be useful to residents and internes in pathology in acquiring a familiarity with various methods of performing autopsies. For teaching students many pathologists will prefer to use their own modification of recognized techniques.

J. S. H.

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Editorials

Medical Examiners for Virginia

THE once honorable and esteemed office of coroner is now generally regarded as a relic of the ox and cart era. It has been kept alive by a combination of medical inertia, civic ignorance and political rapacity.

One can learn all that need be known about the operation of this office in Virginia by reading sections 4306 to 4818 in the Code of 1936. Here it will be discovered that coroners are to be appointed by the courts in each county and city of the state, and that the appointee must be a physician, although the statute also provides that where there is no coroner a justice may act. It further provides that there shall be no inquisition by the coroner unless requested by the Commonwealth's attorney or by the judge. The statute states also that in civil matters, in the absence of the coroner, his duties may be performed by a constable. This has led one judge in Virginia to state "In the county districts, at least in those I am familiar with, the coroner system has fallen almost completely into disuse."

The duties of coroner as laid down in the Code will be found to include the investigation of sudden and violent death and of death in which there has been no doctor in attendance, the summoning of witnesses, the issuance of warrants for the arrest of the accused, the burial of paupers, the disposal of unclaimed money on the person of the deceased, as well as the performance of autopsies where indicated. For all this the coroner receives small fees and less honor.

Among all these heterogenous duties, which have encumbered the office of coroner since Anglo-Saxon times, there is no recognition of the need for a qualified expert to settle accurately and definitely the basic question, what was the cause of death. A coroner in Virginia need have no special training in pathology, chemistry, or medico-legal procedures. In the eyes of the law any doctor is qualified for the most technical of post-mortem examinations and to report with finality on the cause of death.

The office of coroner was abolished in Greater New York by an act of the New York Legislature passed April 14, 1915. In its stead the office of medical examiner was established with provision for appointment by the mayor from the classified civil service and with the stipulation that the appointee "be a doctor of medicine and a skilled pathologist and microscopist." The duties of the office are confined to the investigation at the autopsy table and in the chemical laboratory of the cause of death in all suspicious cases.

Virginia is sorely in need of a revision of its statutes with reference to the office of coroner. Whether we should substitute medical examiners for coroners in some of our larger cities where the services of skilled pathologists are available, or set up regional medico-legal centers covering several counties and presided over by qualified pathologists, or follow the example of Saskatchewan, Canada, where a thoroughly trained expert in pathology and forensic medicine with full authority maintains an office and a laboratory in Alberta and covers a large territory by automobile and plane, makes little difference so long as we take effective steps to establish in this state a modern, for an archaic, system of medico-legal investigation.

Speak to Your Legislator

IN a little while the Virginia Assembly will convene in Richmond after two years of recess. Before it will come many important measures for consideration and decision. We can be sure that some of these will bear upon the health of the people and upon the medical profession. With this in mind doctors of the state should take this opportunity to speak to their legislators now, explaining to them carefully the nature and significance of those anticipated bills which affect the practice of medicine, and obtaining from them, if possible, assurance of willingness to consult with the representatives of the Medical Society of Virginia before voting upon any measure which affects the health of the citizens of the state.

Telescoping the Medical Curriculum

THE clamor for more physicians and for a more rapid processing of them continues. While doctors, deans, medical schools and government officials discuss this matter, it is well to have before us the plan that is working among our friends to the North, the Canadians. Here the medical curriculum has been shortened from four to three years and the internship from twelve to eight months. Each academic year has been divided into four, rather than three terms, covering ten months. It is claimed that this has not thrown teaching or hospital service out of joint. It has insured a much more rapid turnover of doctors for military service, because all doctors who are physically fit after the completion of their three-year course and their eight months hospital service enter directly the medical corps of the Canadian military forces.

There are of course objections to the application of such a plan generally to our American medical colleges, although at Duke University and the University of Tennessee the three-year course is already in operation. Under such a set-up the student who is now working his way through college or is receiving just enough help to enable him to finance his medical education will undoubtedly be seriously put to it to make or raise the additional money needed to keep him continuously in college without opportunity to recoup his fortunes in the holidays. There are those who feel that the present emergency will be over before the effect of the shortening of the curriculum could be felt in an increased number of available doctors. There are others who remember that after the last war there were too many doctors which made it very difficult for some of them to make a living. It has also been pointed out how hard it would be for teachers in medical schools to carry such an increased academic load. The teaching profession needs a break to maintain its efficiency and its enthusiasm. Finally it is argued that a medical student who receives in three years what the present medical student receives in four years, and whose internship is clipped to a bare eight months, is not going to be able to compete successfully in the postwar period with others whose preparation has been more prolonged. Nor will he be eligible for certification or for the specialties without a great deal of backtracking.

Although these are legitimate objections, the seriousness of the present emergency is sufficient to make us give earnest consideration to any plan for producing doctors in sufficient quantities to meet a crisis that will undoubtedly arise should we become more actively involved in a war, the end of which no one can yet see.

The Best Blood Bank

SAN FRANCISCO boasts the best blood bank in the United States, the contribution to date of 1500 volunteer donors. From this enormous pool of blood 900 transfusions have been given to patients in the San Francisco area during the last four months. This is a humanitarian, public spirited enterprise which is growing in popularity. It deserves to be emulated.

Under the San Francisco plan a transfusion can be given within less than an hour after the development of an emergency. All that is needed is the typing of the recipient's blood and notification of the blood bank. The service charge is \$5.00 which covers the cost of withdrawal, the Kline test, typing, refrigeration, container and delivery. Where the blood is requested but then not used, a charge of only \$2.50 is made. From blood so returned, dried plasma is prepared. Another source of dried plasma is the whole blood which has been kept longer than ten days. From such a source sufficient plasma has been accumulated to enable the bank to send valued contributions to fighting units of the British Army and Navy.

The American Red Cross has been interested in establishing plasma banks in various large cities of the United States. It has recently undertaken a more widespread distribution of centers of collection. It would be a fine thing if, at the University of Virginia where it is understood a bank has already been established, at the Medical College of Virginia where one is in contemplation, and in cities other than Charlottesville and Richmond, the appeal for plasma could be met with anything like the generosity exhibited in the San Francisco area.

Luther Emmett Holt

IN the early decades of the Twentieth Century there was hardly a literate mother in the United States who had not read *The Care and Feeding of Children* and there were certainly very few doctors who did not have upon their shelves a well thumbed volume of the *Diseases of Infancy and Childhood*. Holt, the pediatrician, was a household word throughout America. His great reputation was built on solid achievement in a pioneer field made possible by a few rare endowments of mind and heart. Simple and unaffected in his living, sturdily and ruggedly honest, loyal and devoted to his family, he was a man of tireless drive who spared neither himself nor others in his indomitable will to succeed. Intolerant of sloth and of anything less than the best, he often times seemed austere and lacking in that graciousness and joyousness that one somehow associates with the physician whose life is devoted to the care of children.

Although he lived through the era in which pediatrics came into its own and although he played no small part in its development as a specialty, he remained throughout a pure clinician, making few fundamental contributions to a science whose development rested largely upon laboratory experimentation. He saw pathology, bacteriology, immunology, chemistry and the science of public health bring under control the contagious diseases, as well as the deficiency and nutritional problems that had baffled practitioners of an earlier generation. In all of this he played the role of a sort of middle man of science.

As a teacher Holt was peculiarly gifted. Quiet, serious, clear and practical he inspired students with zeal for the new knowledge that he was dispensing, and for twenty-one years he sent out graduates from the College of Physicians and Surgeons perhaps better grounded in pediatrics than any corresponding group of young men in this country.

L. Emmett Holt by R. L. Duffus and L. Emmett Holt, Jr., M. D. (D. Appleton-Century Co., N. Y., 1940), is a straight-forward and unembellished account of a New England country boy who, armed with a college education and one course of medical lectures at the Buffalo Medical School, went down to New York City to an internship in the Hospital for the Ruptured and Crippled. Here he not only gained the friendship and support of that inimitable Southerner, Virgil P. Gibney, but managed to take his M. D. degree on the side from the College of Physicians and Surgeons. So equipped, he threw himself into private practice. Early specializing in pediatrics he was soon recognized as the leading exponent of that specialty in New York City. He followed Abraham Jacobi in the chair of Pediatrics at the College

of Physicians and Surgeons, organized and built the Babies' Hospital, shared in the organization of pediatric medical journals and societies, and ultimately became one of the most famous clinicians in the pediatric field in the world.

Advancing years found him as energetic as ever, youthful in his approach to new problems and ready to take a leading part in the child health movement that was one of the fruits of the first World War. As chairman of the Child Health Organization and later as a member of the American delegation to the Committee of Red Cross Societies which met at Cannes in 1919 he did yeoman service. His last adventure took him to China where as an exchange professor in the Peking Union Medical College he gave himself and his influence to the promotion of a plan of the Rockefeller Foundation whereby the best of American medicine was sent to leaven the medicine of the Orient.

We have been a long time waiting for this life of America's late premier pediatrician. It is fortunate that at last we have a glimpse behind the scenes and can really understand this virile, productive, yet reticent man.

The Springs of Virginia

THE startling experience of seeing a ghost come alive, put on flesh and blood and pick up pantaloons and parasol, awaits those who have known that completely dead group of Nineteenth Century medical publications dealing with the virtues of Virginia medical springs, if they will now follow the simple expedient of reading the recently published *The Springs of Virginia*, written by Perceval Reniers. (University of North Carolina Press, Chapel Hill.)

Flitting from White, to Blue, to Red, to Gray, to Yellow Sulphur, from Hot, to Warm, to Healing, to Alum, to Sweet, to Salt Springs, with a style as light as the bubbles that brimmed from any one of them and far more delightful than the taste, the author follows the celebrities who visited these spas, and treats them as symbolic of their day. With apparently complete verisimilitude he records the discomforts of room, table, lawn and cottage, the crowding, unspeakable food, dirty linen, stinking bars, corrupt servants, gamblers, shocking invalids and talented landlords. He moves down the century with a forward and backward motion to sketch its trends until the 1830's have melted almost imperceptibly, but none-the-less changelessly, into the 1900's.

When we close the book we have fought duels and seen suicides, met belles, struggled for beaux, danced countless Germans, lost thousands of dollars, drunk gallons of champaign and quarts of water, and witnessed miracles. And we won't be able to forget the pleasant vacation companion whose bilious fever had developed ulcers on both ankles, lumps on his legs the size of hickory nuts, and rheumatism, not to mention piles.

On the last page of the book a young sport waits at the White Sulphur for the arrival of his automobile which had been shipped from Washington by freight car. He could not know that with the new day that was dawning in transportation was coming also a new day of scientific medicine, when sick people would go, not to springs, but to hospitals. For this new day, Mr. Reniers's book makes us utter a devout "God be thanked."

President's Message

The following communication must not be construed as a message but as a notice to the membership of the Medical Society of Virginia, for the President, at the moment, has nothing within his gray matter that would edify or even interest his fellowmen of the Society. The real purpose is to

announce the committeemen who will be responsible for the work during 1941-42. We stated at Virginia Beach that there would not be many changes this year because some committees needed more time to complete the work begun, others had activities which were more or less connected with defense measures,

and still others had been directly in touch with legislative matters and should not be arrested in their considerations during the coming year because of the meeting of the State Legislature in February 1942:

May we remind the members of the District Councils not to overlook the need of their services in conferring with members of the General Assembly concerning the various items which have been referred to the Legislation Committee. Information with regard to these will be sent members of the Councils.

If at any time we can be of service to the various chairmen, it will be our pleasure to respond within the limits of our time and ability. We are not out looking for work but we wish to be polite and offer our services if indeed some misguided soul feels that our services are required. However, do not interpret this statement to mean that we are afraid of work because we will actually take off our coat, roll up our sleeves, and assume the Tom Sawyer roll. Seriously, our services are yours to command.

ROSHIER W. MILLER, *President*
Medical Society of Virginia.

Standing Committees

(The numbers have names indicate length of term of office, as, in accordance with the By-Laws of the Society, new members of Standing Committees are named by in-coming Presidents for terms of three years, except in the case of the Department of Clinical and Medical Education.)

PUBLICATION AND PROGRAM: Wyndham B. Blanton, M. D. (2), Richmond, *chairman*; H. S. Daniel, M. D. (1), Louisa; J. Edwin Wood, Jr., M. D. (3), Charlottesville.

SCIENTIFIC EXHIBITS AND CLINICS: Dr. W. Ambrose McGee (3), Richmond, *chairman*; Dr. W. W. S. Butler (1), Roanoke; Dr. George A. Duncan (2), Norfolk.

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION: Dr. Walter B. Martin, *chairman*; Mr. George B. Zehmer, *executive secretary*; Dr. I. C. Riggan, State Health Commissioner; Dr. Lee E. Sutton, Medical College of Virginia; Dr. H. B. Mulholland, University of Virginia; Dr. J. W. Preston, Roanoke; Dr. C. R. Titus, Bassets.

LEGISLATION: Dr. Dean B. Cole (2), Richmond, *chairman*; Dr. W. D. Kendig (2), Kenbridge; Dr. Alex. F. Robertson (2), Staunton; Dr. C. M. Caravati (1), Richmond; Dr. C. C. Smith (1), Norfolk; Dr. J. Morrison Hutcheson (1), Richmond; Dr. C. D. Nofsinger (3), Roanoke; Dr. B. F. Eckles (3), Galax; Dr. J. B. McKee (3), Winchester.

MEDICAL ECONOMICS: Dr. John Hundley, Jr. (3), Lynchburg, *chairman*; Dr. A. B. Hodges (3), Norfolk; Dr. Guy Fisher (2), Staunton; Dr. Carrington Williams (2), Richmond; Dr. H. A. Latane (1), Alexandria; Dr. James P. King (1), Radford.

MEMBERSHIP: Dr. J. Bolling Jones (1), Petersburg, *chairman*; Dr. D. M. Kipps (3), Front Royal; Dr. G. F. Simpson (2), Purcellville.

ETHICS: Dr. I. C. Harrison (2), Danville, *chairman*; Dr. R. L. Raiford (1), Franklin; Dr. T. K. McKee (3), Saltville.

JUDICIAL: Dr. P. St. L. Moncure (2), Norfolk, *chairman*; Dr. P. W. Boyd (1), Winchester; Dr. Donald S. Daniel (3), Richmond.

Special Committees

ADVISORY BOARD TO WOMAN'S AUXILIARY: Dr. J. Powell Williams, Richmond, *chairman*; Dr. Hawes Campbell, Sr., Venter; Dr. H. W. Rogers, Norfolk.

CHILD WELFARE: Dr. Franklin D. Wilson, Norfolk, *chairman*; Dr. C. W. Purcell, Danville; Dr. E. A. Harper, Lynchburg; Dr. C. E. Conrad, Harrisonburg; Dr. Jas. N. Williams, Richmond; Dr. Leta J. White, Petersburg; Dr. R. D. Bates, Newtown; Dr. J. M. Bishop, Roanoke; Dr. L. T. Royster, Charlottesville.

MATERNAL HEALTH: Dr. M. P. Rucker, Richmond, *chairman*; Dr. C. J. Andrews, Norfolk; Dr. A. M. Grose-close, Roanoke; Dr. T. J. Williams, Charlottesville; Dr. J. A. Owen, Turbeville; Dr. E. B. Kilby, Toano; Dr. Walter McMann, Danville.

WALTER REED COMMISSION: Dr. C. P. Jones, Newport News, *chairman*; Dr. J. D. Clements, Ordinary; Dr. J. W. Smith, Hayes Store.

TO ARRANGE MEDICAL PROGRAM FOR VIRGINIA CONFERENCE OF SOCIAL WORK: Dr. Wm. Bickers, Richmond, *chairman*—also to be delegate to Section of Social Action of the Conference; Dr. D. C. Wilson, Charlottesville; Dr. J. M. Hurt, Blackstone; Dr. C. F. Graham, Wytheville; Dr. C. E. Martin, Emporia.

PNEUMONIA COMMISSION: Dr. Wyndham B. Blanton, Richmond, *chairman*; Dr. George B. Lawson, Roanoke; Dr. P. S. Smith, Abingdon; Dr. Harry Walker, Richmond; Dr. Staige D. Blackford, Charlottesville; Dr. B. S. Yancey, Harrisonburg; Dr. John R. Hamilton, Nassawadox; Dr. E. L. Alexander, Newport News; Dr. Ernest G. Scott, Lynchburg.

TO CONFER WITH STATE BOARD OF NURSES' EXAMINERS: Dr. W. Lowndes Peple, Richmond, *chairman*; Dr. Russell Buxton, Newport News; Dr. C. B. Morton, Charlottesville; Dr. Frank S. Johns, Richmond; Dr. Elisha Barksdale, Lynchburg; Dr. Alfred P. Jones, Roanoke.

SYPHILIS CONTROL: Dr. R. D. Kimbrough, Norfolk, *chairman*; Dr. E. E. Barksdale, Danville; Dr. D. C. Smith, Charlottesville; Dr. J. W. Love, Alexandria; Dr. W. B. Porter, Richmond.

TUBERCULOSIS: Dr. F. B. Stafford, Sanatorium, *chairman*; Dr. E. C. Harper, Richmond; Dr. C. L. Harrell, Norfolk.

ADVISORY TO STATE DEPARTMENT OF HEALTH: Dr. F. H. Smith, Abingdon, *chairman*; Dr. P. Q. Daniel, Big Rock; Dr. J. M. Lynch, Cape Charles; Dr. R. A. Moore, Farmville; Dr. John A. Gibson, Leesburg.

CANCER: Dr. E. P. Lehman, Charlottesville, *chairman*; Dr. I. C. Riggan, Richmond; Dr. R. P. Bell, Staunton; Dr. R. L. Payne, Norfolk; Dr. Wright Clarkson, Petersburg; Dr. Fred Hodges, Richmond; Dr. I. A. Bigger,

Richmond; Dr. Hugh H. Trout, Roanoke.

INDUSTRIAL HEALTH: Dr. F. J. Wampler, Richmond, *chairman*; Dr. C. B. Bowyer, Stonega; Dr. W. R. Whitman, Roanoke; Dr. I. C. Riffin, Richmond; Dr. H. U. Stephenson, Richmond; Dr. H. T. Hawkins, Waynesboro; Dr. Geo. McLean Lawson, Charlottesville; Dr. H. W. Decker, Richmond.

COORDINATION OF ADJUNCTS OF MEDICINE, i.e., DENTISTRY, PHARMACY AND NURSING: Dr. J. Shelton Horsley, Richmond, *chairman*; Dr. Frank A. Farmer, Roanoke; Dr. Harold W. Miller, Woodstock.

HEALTH MUSEUM: Dr. Fletcher J. Wright Petersburg, *chairman*; Dr. William Meyer, Herndon; Dr. H. B. Holsinger, Farmville.

Department of Clinical and Medical Education of the Medical Society of Virginia

University of Virginia Clinic.

The twenty-eighth postgraduate clinic was held at the University of Virginia Hospital on November 14 and 15. As announced in the November issue of the MONTHLY, the program was devoted to papers and discussions on Gastro-enterology. The following doctors from Virginia, North Carolina, and the District of Columbia were in attendance:

Dr. H. L. Baptist, Ivy.
Dr. T. N. Barnett, Richmond.
Dr. Mary Baughman, Richmond.
Dr. Julian R. Beckwith, Clifton Forge.
Dr. C. D. Bennett, Chatham.
Dr. Motley Booker, Richmond.
Dr. M. O. Burke, Richmond.
Dr. C. M. Caravati, Richmond.
Dr. B. L. Carleton, Newport News.
Dr. Douglas Chapman, Richmond.
Dr. H. T. Chelf, Culpeper.
Dr. J. C. Coulter, Charlottesville.
Dr. Frank Daniel, Charlottesville.
Dr. H. S. Daniel, Louisa.
Dr. E. D. Davis, Crozet.
Dr. T. D. Davis, Richmond.
Dr. J. S. DeJarnette, Staunton.
Dr. Early B. Dovell, Unionville.
Dr. Leroy Dunn, Washington, D. C.
Dr. Thelma Dunn, Washington, D. C.
Dr. W. L. Early, Wolfstown.
Dr. E. H. Edmunds, Lynchburg.
Dr. E. E. Epperson, Meadow View.
Dr. Percy Harris, Scottsville.
Dr. M. K. Humphries, Charlottesville.
Dr. C. H. Iden, Berryville.
Dr. A. M. Jacobson, Roanoke.
Dr. Luther W. Kelly, Charlotte, N. C.
Dr. J. Paul Kent, Altavista.
Dr. J. P. King, Radford.
Dr. D. M. Kipps, Front Royal.
Dr. W. A. Kyger, Free Union.
Dr. G. B. Lawson, Roanoke.
Dr. Sidney Le Bauer, Greensboro, N. C.
Dr. Anita Lotti, Charlottesville.

Dr. P. R. MacFayden, Concord, N. C.
Dr. Florence Mahoney, Staunton.
Dr. E. B. Mewborne, Newport News.
Dr. Carleton Moorman, Altavista.
Dr. George W. Parrott, New Market.
Dr. T. E. Patteson, Ransons.
Dr. J. Marshall Payne, Staunton.
Dr. J. W. Preston, Roanoke.
Dr. Charles W. Putney, Staunton.
Dr. B. A. Rice, Forest.
Dr. T. E. Rucker, Lynchburg.
Dr. E. G. Scott, Lynchburg.
Dr. B. P. Seward, Roanoke.
Dr. O. N. Shelton, Orange.
Dr. R. F. Simms, Richmond.
Dr. William G. Sorrell, Amelia.
Dr. Frank Stafford, Sanatorium.
Dr. Robert V. Terrell, Richmond.
Dr. J. F. Thaxton, Tye River.
Dr. Allen Walker, Washington, D. C.
Dr. D. E. Watkins, Waynesboro.
Dr. William H. Wood, Jr., Charlottesville.

Following the Saturday morning session many of the doctors attended the Virginia-Lehigh football game in Scott Stadium.

New Members of the Department.

President Roshier W. Miller has announced the appointment of the following members of the Department of Clinical and Medical Education for the year 1941-1942:

Dr. Walter B. Martin, Norfolk, *Chairman*.
Dr. I. C. Riffin, State Health Commissioner.
Dr. Lee E. Sutton, Medical College of Virginia.
Dr. H. B. Mulholland, University of Virginia.
Dr. J. W. Preston, Roanoke.
Dr. C. R. Titus, Bassetts.

Any of the above will be glad to have your suggestions for enabling the Department to better serve the interests of the doctors of Virginia.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

Virginia Orthopedic Society.

At the annual meeting of this Society on October 7, Cavalier Hotel, Virginia Beach, Dr. Bernard H. Kyle was elected President and Dr. C. E. Keefer, Secretary-Treasurer.

Dr. Prentice Kinser of Danville, was elected to membership.

The following resolutions were presented by Drs. W. T. Graham and H. Page Mauck:

In the passing of Doctor Donald MacKenzie Faulkner not only the Orthopedic Society of Virginia, but the whole country has experienced a very definite and irreparable loss. He was a brilliant surgeon, a good teacher and a clear and accurate writer and above all, a careful, considerate and painstaking man.

This Society regrets exceedingly that we have sustained this loss and we wish this expression of our sympathy to be spread on our minutes and that a copy of the resolution be sent to Mrs. Faulkner.

The scientific program was the various members presenting their own pet therapy or treatment for various fractures followed by a general discussion. It was so completely enjoyed the same type of program was decided upon for the 1942 meeting.

C. E. KEEFER, M. D.,
Secretary-Treasurer.

Fourth District and Southside Virginia Medical Society.

The regular meeting of this Society was held at Lawrenceville on November 18, under the presidency of Dr. J. B. Kiser of Emporia. Soft drinks were served and a social hour enjoyed, after which the following program was presented: Acute Appendicitis—Report of Four Cases by Dr. T. H. Anderson, Lawrenceville; Typhoid Fever, Its Complications and Sequelae by Dr. J. Bolling Jones, Petersburg; Otitis Media in Children by Dr. Morgan B. Raiford, Franklin; The Sprained Back by Dr. W. C. Harman, Dolphin; Review of Nerve Injuries of the Upper Extremity with a Simple Demonstration of the Associated Anatomy by Dr. Thomas

Beath, Richmond; and Poliomyelitis and the Service Now Rendered These Cases by the National Foundation by Dr. H. Dinwiddie Crow, Courtland. A recess was taken for dinner during the scientific program.

During the business session, Dr. C. W. Robertson of Alberta was accepted as a new member, and a motion was passed directing the secretary to send flowers to Dr. R. L. Raiford of Franklin who was convalescing.

Northern Neck Medical Association.

At the annual meeting of this association held in Kilmarnock, early in November, the following officers were elected: President, Dr. M. C. Oldham, Lancaster; vice-presidents, Drs. J. H. Hare and H. L. Segar, both of Warsaw; and secretary-treasurer, Dr. Lee S. Liggan, Irvington (re-elected).

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held November 3, at Lynchburg General Hospital, with the president, Dr. Powell Dillard, presiding.

Dr. Joseph Houck of Lynchburg was elected to membership.

Dr. Earl Burky, bacteriologist for Wilmer Ophthalmological Institute, Johns-Hopkins Hospital, gave an interesting talk on burcellosis.

C. E. KEEFER, *Secretary-Treasurer.*

The Tazewell County Medical Society

Held its regular dinner meeting on November the 13th, at which time Drs. Norman G. Patterson of Richlands and Oris Aaron of Raven were elected to membership. Dr. E. L. Gage of Bluefield, W. Va., was the guest speaker and presented a most interesting paper on "Neuro-surgery in the Treatment of Intractable Pain".

Dr. Rufus Brittain of Jewell Ridge and Dr. Mary Elizabeth Johnston of Tazewell are president and secretary, respectively.

News

Southern Medical Association.

Through the third day, there was a registration of 4,880 at the meeting of the Association in St. Louis, November 10-13, with Dr. Paul H. Ringer of Asheville, N. C., presiding. Dr. M. Pinson Neal,

Columbia, Mo., succeeded to the presidency, and the following were elected: president-elect, Dr. Harvey F. Garrison, Sr., Jackson, Miss.; vice-president, Dr. Joseph C. Peden, St. Louis; chairman of council, Dr. R. J. Wilkinson, Huntington, W. Va.;

chairman of board of trustees, Dr. Fred M. Hodges, Richmond; and secretary-manager, Mr. C. P. Loran, Birmingham.

Richmond, Va., was selected as the 1942 place of meeting.

Dr. H. B. Haag and Dr. J. H. Weatherby, Medical College of Virginia, Richmond, received Honorable Mention for their scientific exhibit on Factors Influencing Peripheral Temperature.

The following Virginia doctors were registered at the St. Louis meeting:

Dr. Samuel A. Anderson, Jr., Richmond.
 Dr. Mallory S. Andrews, Norfolk.
 Dr. Vincent W. Archer, University.
 Dr. James B. Bain, Portsmouth.
 Dr. Ralph G. Beachley, Arlington.
 Dr. William M. Bickers, Richmond.
 Dr. H. G. Bland, Newport News.
 Dr. Ben L. Boynton, Norfolk.
 Dr. Wright Clarkson, Petersburg.
 Dr. G. Robert Coatney, Arlington.
 Dr. V. M. Cox, Bristol.
 Dr. Albert A. Creedy, Newport News.
 Dr. Austin I. Dodson, Richmond.
 Dr. Hunter M. Doles, Norfolk.
 Dr. Thomas B. Ely, Jonesville.
 Dr. Charles J. Frankel, University.
 Dr. K. D. Graves, Roanoke.
 Dr. H. B. Haag, Richmond.
 Dr. James K. Hall, Richmond.
 Dr. Edgar C. Harper, Richmond.
 Dr. Fred M. Hodges, Richmond.
 Dr. Randolph Hoge, Richmond.
 Dr. B. A. Hopkins, Stuart.
 Dr. J. Shelton Horsley, Sr., Richmond.
 Dr. E. P. Lehman, University.
 Dr. James W. Love, Alexandria.
 Dr. Howard R. Masters, Richmond.
 Dr. William T. Moore, Richmond.
 Dr. Maxwell H. Mund, Martinsville.
 Dr. Thomas W. Murrell, Richmond.
 Dr. W. Ambrose McGee, Richmond.
 Dr. William P. McGuire, Winchester.
 Dr. Allen W. Pepple, Richmond.
 Dr. F. O. Plunkett, Lynchburg.
 Dr. Frank H. Redwood, Norfolk.
 Dr. I. C. Riffin, Richmond.
 Dr. M. P. Rucker, Richmond.
 Dr. Ronald N. Shelly, Portsmouth.
 Dr. Chas. D. Smith, Roanoke.
 Dr. Dudley C. Smith, University.
 Dr. James B. Stone, Richmond.
 Dr. Landon E. Stubbs, Newport News.
 Dr. Lee E. Sutton, Richmond.
 Dr. Oscar Swineford, Jr., University.
 Dr. E. H. Terrell, Richmond.
 Dr. Warren T. Vaughan, Richmond.
 Dr. David C. Wilson, University.

Bulletin Published by Medical School of University of Virginia.

The first issue of the Bulletin of the University of Virginia Medical School and Hospital—Fall 1941—has been received and gives much interesting information about the activities of the Medical School, faculty and buildings. It is stated that there will be two issues during the session 1941-1942 and that the initial issue has been prepared by a committee from the faculty, in response to suggestions from various alumni sources. The Editorial Committee includes Dr. H. E. Jordan, Dr. H. B. Mulholland, Dr. Edwin P. Lehman, Dr. Andrew D. Hart and Dr. E. W. Kirby, with Mrs. E. M. Landis as editorial secretary.

All communications to the Bulletin should be addressed to the Bulletin, Office of the Dean, University of Virginia Medical School, Charlottesville, Va.

Personnel Notes from the State Department of Health.

Dr. Clifford E. Waller, formerly with the U. S. Public Health Service, has been appointed Health Officer of the newly organized health department for Loudoun County at Leesburg.

Dr. S. D. Sturkie, formerly Venereal Disease Clinician of Fairfax County, has been appointed Health Officer of Smyth County. He succeeds Dr. W. W. Griggs, who now is Health Officer of Newport News, Virginia, succeeding Dr. G. Colbert Tyler, who resigned to enter private practice.

At the resignation of Dr. John H. Bonner, Dr. Samuel S. Shouse, formerly connected with the Talladega Health Department, Alabama, has been appointed Health Officer for the Page-Warren-Shenandoah Health District at Luray.

Dr. Daniel Hope, Jr., of Ellicott City, Maryland, has been appointed Assistant Health Officer of the Brunswick-Greenville-Mecklenburg Health District at Lawrenceville.

Dr. Charles M. Caravati,

After several months' work in the Department of Gastro-enterology and Nutrition at the Johns Hopkins Hospital, Baltimore, has returned to Richmond, and opened offices in Professional Building. His practice will be limited to internal medicine, with special emphasis on diseases of the gastro-intestinal tract.

The Association of Norfolk and Western Railway Surgeons

Held its annual convention in New York on October 1st and 2nd, under the presidency of Dr. H. G. Camper, Welch, W. Va. Officers elected were: President, Dr. Ralph W. Holmes, Chillicothe, Ohio; vice-presidents, Drs. Harry B. Stone, Sr., Roanoke and B. S. Clements, Matoaka, W. Va.; and secretary-treasurer, Dr. T. D. Armistead, Roanoke (re-elected).

Mental Hygiene Society of Virginia.

An interesting program was presented at the annual meeting of this Society in Richmond, October 29, under the presidency of Dr. David C. Wilson of the University of Virginia. Guest speakers on this occasion were Dr. Merrill Moore of Boston, whose subject was "The Problem of Alcoholism", and Dr. Foster Kennedy of New York City, who spoke on "The Psychobiology of Isolationism".

The Association of Seaboard Airline Railway Surgeons

Held its annual meeting at Jacksonville, Fla., November 11, 12 and 13, at the Roosevelt Hotel, under the presidency of Dr. R. O. Lyell of Miami. There was an attendance of approximately two hundred surgeons and their wives and an enjoyable social time was had in addition to the scientific program. One of the papers—Prevention of Infection and Treatment of Acute Head Injuries—was presented by Dr. C. C. Coleman of Richmond. Other Virginia doctors present were: Drs. W. T. Graham, Beverley R. Tucker, W. R. Bracey, Clifton M. Miller, Finley Gayle, and L. J. Roper of Richmond; Julian L. Rawls and A. A. Burke of Norfolk; Joseph D. Collins and M. H. Hood of Portsmouth; F. J. Morrison of Suffolk; and W. W. Wilkinson of La Crosse.

Dr. Wilbur R. Bracey of Richmond was elected president for the coming year, with Drs. Jabez Jones of Savannah, Leland F. Carlton of Tampa, and Harold D. Van Schaick of Jacksonville as vice-presidents. Dr. J. W. Palmer of Ailey, Ga., was re-elected secretary-treasurer. Dr. Joseph D. Collins of Portsmouth is chief surgeon for this railway. The 1942 session will be held in Miami.

Dr. D. Hunter Marrow,

After spending the summer at his home in Boynton, has gone to Florida, as usual for the winter, and will spend the next few months at Daytona Beach.

Dr. J. A. Abercrombie,

Who practiced for a time in southwestern Virginia, but more recently in Birmingham, Alabama, is now in Richlands and has joined the staffs of the Mattie Williams and Grundy Hospitals as a surgeon.

Dr. Horace R. Hicks,

Highland Springs, has been elected vice-president in the newly organized Fairfield District Lions Club.

Urology Award.

The American Urological Association offers an annual award "not to exceed \$500.00" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

Essays shall be in the hands of the Secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Conn., on or before April 1, 1942.

American Academy of Ophthalmology and Otolaryngology.

At the annual meeting in Chicago, October 19-23, Dr. James A. Babbitt, Philadelphia, was named president-elect. Vice-presidents elected are Drs. Walter Theobald, Chicago; Forrest J. Pinkerton, Honolulu, Hawaii; and Francis E. Le Jeune, New Orleans. These doctors will assume their offices on January 1, at which time Dr. Ralph I. Lloyd, Brooklyn, will be installed as president. Dr. William P. Wherry, Omaha, was continued as executive secretary-treasurer.

Buy Christmas Seals!

Since 1907, when the first Christmas Seal sale was held, the tuberculosis death rate has been reduced 75 per cent. More than two million lives have been saved. However, tuberculosis still kills more people between 15 and 45 than any other disease. By using Christmas Seals you make possible a year-round campaign against this pestilence. Use them on all letters, cards, and packages from now until Christmas.

Married.

Dr. J. Frederick Chairsell, Jr., Christiansburg, and Miss Mary Geraldine Hart, Watertown, Mass.,

October 21. Dr. Chairsell is a graduate of the Medical College of Virginia in 1938.

Dr. William Alfred Mitchell, Newport News, and Miss Ella Walker Hill, Richmond, November 8. Dr. Mitchell received his medical degree from the University of Virginia in 1938.

Dr. George S. Fultz, Jr., Richmond, and Miss Lora Helton, Lumberton, N. C., October 25. Dr. Fultz is a graduate of the Medical College of Virginia, class of '38.

Dr. A. I. Weinstein and Miss Nell Virginia Snyder, both of Richmond, November 1.

Dr. A. L. Herring,

Richmond, attended the annual meeting of the American College of Surgeons held in Boston, November 3-7, at which time he was admitted into the membership of the College.

Dr. Harry B. Yeatts,

Who practiced for several years at Barranca-Bermeja, Colombia, South America, has returned to the States and has opened offices in Masonic Temple Building, Danville, with his father, Dr. W. C. Yeatts. His work is limited to the practice of obstetrics. Dr. Yeatts is a member of the class of '28, Medical College of Virginia, and interned at Memorial Hospital, Richmond, and in the Sloane Hospital for Women, in the Columbia Medical Center in New York, following which he went to South America.

News from the Medical College of Virginia.

Seventy-nine medical schools of North America were represented at the sessions of the Association of American Medical Colleges which were held in Richmond, October 29 to 31, with the Medical College of Virginia as host. Only six institutions in membership, including the University of the Philippines, sent no delegates.

Dr. E. I. Evans has been given a grant of \$6,300.00 by the Federal government, Office of Scientific Research Development, for further research on surgical shock.

Dr. J. H. Scherer has received a grant of \$3,000.00 from the John and Mary R. Markle Foundation for the continuation of his work in reticulocytosis in jaundice.

Base Hospital 45 Veterans' Association and the College joined in an Armistice Day program on November 11 at the Monumental Church. Dr. W. Lowndes Peple spoke briefly for Dr. Stuart Mc-

Guire as honorary commander of the Association. Dr. S. C. Mitchell was the guest speaker of the occasion.

Founders' Day exercises scheduled for December 4 will not be held this year.

Dr. Lee E. Sutton, Jr., professor of pediatrics, has been elected chairman of the section on medical education of the Southern Medical Association. The Southern Medical Association will hold its 1942 annual meeting in Richmond, with the College acting as joint host.

University of Virginia News.

The newly-formed Virginia Branch of the Society of American Bacteriologists met in Charlottesville on Saturday, November 1. Papers covering a wide range of subjects including milk, water, and shellfish bacteriology, medical bacteriology and mycology were presented at morning and afternoon sessions.

At the recent meeting of the American Public Health Association in Atlantic City, a report of the work of the Committee on Whooping Cough was presented by Dr. George McL. Lawson, Professor of Preventive Medicine and Bacteriology of the University of Virginia. This committee is designed to evaluate public health administrative practices in the control of whooping cough and to act as a correlating agency for research in this field in North America.

On October 20, Dr. Claude E. Forkner of the Cornell University Medical School delivered the second annual Phi Beta Pi Medical Fraternity lecture. He spoke on the subject of "The Diagnosis and Treatment of the Leukemias".

Dr. Fletcher Woodward presented a paper before the American Academy of Ophthalmology and Otolaryngology in Chicago on October 23, on "Complete Cicatricial Stenosis of the Esophagus: Permeation Made Possible by External Operation in Certain Cases." On November 11 he spoke before the Danville and Pittsylvania County Medical Society on "Diseases of the Esophagus". He spoke before the Roanoke Academy of Medicine on Monday night, December 1, on the subject "The Treatment of Malignant Tumors about the Head and Neck".

Dr. W. W. Waddell attended the meeting of the American Academy of Pediatrics in Boston, October 7-11 and took part in the Round Table discus-

sion on the subject "Hemorrhage in the Newborn".

Dr. Samuel Vest was guest speaker at the North Carolina Urological Society, which met at Sedgfield, October 27. He spoke on the subjects "Advancements in Endocrinology Concerning the Prostate" and "Experimental Surgery of the Kidney".

During the meetings of the Southern Medical Association in St. Louis, November 10 to 13, Dr. David C. Wilson gave the Chairman's Address in the Section on Neurology and Psychiatry, speaking on the subject "The Psychiatrist Looks at War"; Dr. Edwin P. Lehman took part in a panel discussion on the "Diagnosis of Gastro-Intestinal Diseases"; Dr. Dudley C. Smith presented a paper before the Section on Dermatology and Syphilology on "The Treatment of Vincent's Infection with Fuadin"; Dr. Oscar Swineford spoke on "Cottonseed Sensitivity" before the Section on Allergy; Dr. Charles J. Frankel presented a paper before the Section on Bone and Joint Surgery on "The Palliative Treatment of Irreducible Congenital Dislocation of the Hip".

Lehigh University conferred the honorary degree of Doctor of Science on Dr. Harvey E. Jordan at Convocation on October 3, 1941.

The School of Surgery and Gynecology has received a grant of \$2,000 from the John and Mary R. Markle Foundation, for support of further investigations on heparin in relation to peritoneal adhesions and other tissue reactions, under the direction of Dr. Edwin P. Lehman and Dr. Floyd Boys.

Dr. Brock Dear—'08, of Washington, Connecticut, recently retired from active practice in Bronxville, New York, has made a gift of his large collection of obstetrical instruments to the Department of Obstetrics and Gynecology. Dr. Dear, during his student days at the University of Virginia, was befriended by the late Dr. Joseph Bryan of Richmond, and he has made his gift in grateful remembrance of Dr. Bryan.

Dr. J. Edwin Wood, Jr., addressed the Mercer Medical Society, Princeton, W. Va., October 9. His subject was "Anesthesia and the Cardiovascular System". At the meeting of the Association of Surgeons of the C. & O. Railway at White Sulphur Springs, on October 25, Dr. Wood spoke on "The Management of Certain Cardio-vascular Conditions Before and After Operation."

The Neuropsychiatric Society of Virginia held its October meeting in the Amphitheatre, University of Virginia Hospital, on the 22nd. Appearing on the program were Dr. William Gayle Crutchfield, University, who spoke on the "Neurosurgical Clinic"; Dr. David C. Wilson, University, whose subject was "Treatment of Various Personality Reactions by Electro-Shock"; Dr. Henry B. Mulholland, University, who spoke on "The Latest Developments in our Knowledge of Vitamins, with an especial consideration of their relationship to the Central Nervous System"; Dr. Walter Freeman, Washington, D. C., who conducted a Clinical-Pathological Conference.

On November 14, Dr. Chester M. Jones, Clinical Professor of Medicine, Harvard University, delivered an address before the Virginia Alpha Chapter of Alpha Omega Alpha. He spoke on "The Influence of the Nervous System on Digestive Tract Symptoms".

Urologist Honored.

Dr. Joseph Francis McCarthy, Director of the Department of Urology of the New York Polyclinic Medical School and Hospital, received an unusual honor at Santiago, Chile, recently when a new wing in the Barros Luco Hospital was named for him. The entire cost of construction of the wing and equipment was covered by an endowment by Abraham Atala, a Syrian merchant. Dr. Edward Abud, a Syrio-Chilean pupil of Dr. McCarthy, presided, and the ceremony was attended by President Pedro Aguirre Cerda and Claude E. Bowers, American Ambassador, who said he felt the entire American medical profession has been honored.

Dr. Dean B. Cole,

Richmond, addressed the Ware County Medical Society at Waycross, Ga., on November 5, his subject being The Treatment of Pneumonia.

Association of Surgeons of the Chesapeake & Ohio Railway.

The annual meeting of this Association was held at White Sulphur Springs, W. Va., October 24 and 25, under the presidency of Dr. Clarence Porter Jones of Newport News. Dr. Thomas W. Moore of Huntington, W. Va., was elected president, Dr. M. L. Rea of Charlottesville, vice-president, and Mr. G. E. Meanley of Richmond, was re-elected secretary-treasurer.

Commendation for Council on Pharmacy and Chemistry.

Mead Johnson & Company gives the following reasons why they cooperate with the Council:

"Voluntarily, we market only Council-Accepted products because we have faith in the principles for which the Council on Pharmacy and Chemistry (and the Council on Foods) stand.

"We have witnessed the three decades during which the Council has brought order out of chaos in the pharmaceutical field. For over thirty years it has stood—alone and unafraid—between the medical profession and unprincipled makers of proprietary preparations.

"The Council verifies the composition and analysis of products, and substantiates the claims of manufacturers. By standardizing nomenclature and disapproving therapeutically suggestive trade names, it discourages shotgun therapy and self-medication. It is the only body representing the medical profession that checks inaccurate and unwarranted claims on circulars and advertising as well as on packages and labels."

Dr. William P. McGuire,

Winchester, has been called into active duty as a lieutenant in the Medical Corps of the Navy and is on duty at the U. S. Naval Hospital, Washington, D. C.

Capt. Guy C. Richardson,

Flight surgeon, formerly of Bristol, has been transferred to Wichita Falls, Texas.

Fellowships in Nutrition.

Effective November 1, 1941, Swift & Company will make available a limited number of fellowships to universities and medical schools, for research in nutrition.

To be eligible for grants, projects should be aimed at one of the following objectives:

1. The development of fundamental information on the nutritive properties of foods.
2. The application of this fundamental information on the nutritive properties of foods to the improvement of the American diet and health.

While this company is naturally interested in nutrition research on meat and meat products, grants will not be strictly limited to work in these fields. Any worthwhile study on the nutritive properties of foods or the improvement of diets will be eligible for a grant.

Each fellowship will be operative for one year, unless renewed, and will be granted in an amount to be determined by the scope of the project. Placement of the Fellowships in Nutrition will be coordinated by Dr. R. C. Newton and his staff of the Research Laboratories of Swift & Company, Union Stock Yards, Chicago.

American Board of Obstetrics and Gynecology.

The written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada, on Saturday, January 3, 1942. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to examination whose examination fee has not been paid at the Secretary's Office. Candidates who successfully complete the Part I examination will proceed automatically to the Part II examination held in June 1942.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting at Atlantic City, N. J., in June 1942, immediately prior to the annual meeting of the American Medical Association.

These examinations mark the close of the two groups of classification of applicants for examination. Thereafter, the Board will have only one classification of candidates, and all will be required to take the Part I examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Government Interested in Standardization of Clinical Thermometers.

A committee of the National Bureau of Standards, U. S. Department of Commerce, has prepared recommendations for the standardization of clinical thermometers, which have been sent producers, distributors and users, the purpose of these recommendations being to provide a specification and methods of testing clinical thermometers as a basis for certification of quality and accuracy; to assure the purchaser that the thermometer has been tested and found to meet the requirements of a nationally recognized standard; and to promote fair competition among manufacturers.

When the standard has been endorsed by a satisfactory majority, in the absence of active, valid opposition, the success of the project will be announced.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Blair, Moore & Byars—Cancer of the face and mouth.
 Bridges, M. A.—Dietetics for the clinician.
 Christian, H. A.—The diagnosis and treatment of diseases of the heart.
 Comroe, B. I.—Arthritis and allied conditions.
 Dandy, W. E.—Orbital tumors.
 Diagnostic procedures and reagents.
 Dole, M.—The glass electrode.
 Finlay, C. E.—Carlos Finlay and yellow fever.
 Flexner, S. & J. T.—William Henry Welch and the heroic age of American medicine.
 Garceau, O.—The political life of the American Medical Association.
 Harley, G. W.—Native African medicine.
 Henry, G. W.—Sex variants.
 Jacobs, M. B.—The analytical chemistry of industrial poisons, hazards and solvents.
 Kessler, H. H.—Accidental injuries.
 Kolmer & Tuft—Clinical immunology, biotherapy and chemotherapy.
 Lewin, P.—Infantile paralysis.
 Lichtwitz, L.—Functional pathology.
 Maxcy, K. F.—Papers of Wade Hampton Frost, M. D.
 Mazer, C.—Diagnosis and treatment of menstrual disorders and sterility.
 Morrison & Chenoweth—Normal and elementary physical diagnosis.
 Penfield & Erickson—Epilepsy and cerebral localization.
 Proetz, A. W.—Essays on the applied physiology of the nose.
 Reniers, P.—The springs of Virginia.
 Rony, H. R.—Obesity and leanness.
 Rowe, A. H.—Elimination diets and the patient's allergies.
 Siler, J. F.—Immunization against typhoid fever.
 Spaeth, E. B.—The principles and practice of ophthalmic surgery.
 Steindler, A.—Orthopedic operations.
 Stern, B. F.—Society and medical progress.
 Taylor, L. A.—Plants used as curatives by certain southeastern tribes.
 Topley, W. W. C.—Authority, observation and experiment in medicine.

General Practitioner Wanted.

A lucrative field is left open by the death of a general practitioner. An attractive clinic and equipment for rent in a field that will yield \$1,000 a month to the right person. If interested, communicate with Mrs. T. A. Smith, 2226 Plaza, Charlotte, N. C.

Obituary Record

Dr. Edmund Anderson Terrell,

For over fifty years a practicing physician at Fredericks Hall, died September the 18th, at the age of eight-two years. He was a graduate of the Medical College of Virginia in the class of '85, and shortly thereafter became a member of the Medical Society of Virginia. He always took an active interest in the affairs of his community and was for many years a surgeon for the Chesapeake and Ohio Railway. Three children and a large family connection survive him.

Dr. James Gordon Trant

Was born in Richmond, March 7, 1881, son of Charles Baylor and Laura Hayward Trant. He was educated at McGuire's Preparatory School, Richmond, later graduating from the Medical College of Virginia in 1906. His entire professional life was spent in his home city. His death occurred at his home, October 29, 1941, following an illness of four months.

In addition to a large general practice, he served Richmond for more than thirty years, first as a district physician and, for the past twenty-three years, assistant medical director of the Richmond Public School System, which position he held at the time of his death.

Dr. Trant was a man of honorable character, genial and friendly, widely known for his work among the indigents of this City, and generous to a fault.

He was a member of Joppa Lodge No. 40, A. F. and A. M., Royal Arch Chapter No. 3, Richmond Academy of Medicine, Medical Society of Virginia, East End Business Men's Association, and for many years a communicant of the Third Christian Church.

R. D. G.

Dr. Clarence Albert Ransom

Died at his home in East Falls Church on September 23, having been in ill health for some time. He was fifty years of age and a graduate in medicine from the Johns Hopkins University in 1918, following which he joined the medical corps of the Army during the World War. Dr. Ransom has been located at East Falls Church for more than twenty years and served as coroner for Fairfax County.

He was a member of the Medical Society of Virginia. Two children survive him.

Dr. Eugene LeRoy Kellum,

Prominent physician of Richmond, was instantly killed in an automobile accident on November 15th. He was forty-two years of age and a graduate in medicine from the University of Pennsylvania in 1924. Dr. Kellum located in Richmond in 1932 and at the time of his death was chief of the medical staff of Grace Hospital. He was a member of Theta Kappa Psi, Alpha Omega Alpha, and Phi Beta Kappa fraternities, and several medical organizations. Dr. Kellum was formerly a member of the Medical Society of Virginia. His wife and parents survive him.

Dr. George R. Sledge

Of Parksley, for a number of years a prominent physician of the Eastern Shore, died October 3, at the age of sixty-two. He was a graduate in medicine from the University of Maryland in 1903, and had been a member of the Medical Society of Virginia since 1912. Dr. Sledge had retired from practice about two years ago because of ill health and spent much time with a daughter in New York City.

Dr. Howe Reese Coleman,

Colliertown, died November 7th after a brief illness. He was sixty-nine years of age and a graduate of the Medical College of Virginia in 1898. Dr. Coleman was a member of the Rockbridge County Board of Supervisors and of the County Board of Health. His wife, two daughters, and five sons survive him. A brother is Dr. C. C. Coleman of Richmond.

Dr. A. B. Smith,

Snowville, died September the 17th, at the age of eighty-three. He was a member of the Medical Society of Virginia but had retired from practice several years ago. He was for many years a member of the county school board.

Dr. Charles Dudley Barksdale,

Sutherlin, died September the 28th of coronary thrombosis. He was sixty-eight years of age and

graduated in medicine from the University of Virginia in 1895. He was formerly a member of the Medical Society of Virginia and also of his county school board.

Dr. Louis Edward Fuller,

Danville, died September the 1st, his death being due to cerebral hemorrhage and hypertension. He was sixty-nine years of age. Dr. Fuller studied medicine at the University of Louisville, graduating in 1894 and was for some time a member of the Medical Society of Virginia.

Dr. James Norment Baker,

Alabama State Health Officer, died November 9th. He was a native of Abingdon, Va., and sixty-five years of age. Dr. Baker graduated from the University of Virginia, Department of Medicine, in 1898.

In Memoriam—John Shelton Horsley, Jr.

WHEREAS, in the death of John Shelton Horsley, Jr., on November 22, 1940, the Ex-Intern's Association of St. Elizabeth's Hospital lost one of its most beloved members, and the shock of his tragic death has saddened our hearts.

BE IT THEREFORE RESOLVED: That we hereby express our deep sorrow at his passing, and, at the same time, our sense of pride in his accomplishments.

Our memories of him are filled with admiration. He was indeed, a great man and one gifted with rare skill in surgery; but to us Shelton was more than this, for he was also an inspiring friend and companion and we loved him.

A full account of his life's history has been recorded in literature and now we wish only to think of his bright smile, of his wholehearted friendliness, of the warm personal greeting that he always gave us, and of his genuine sincerity of purpose. These things, more than all others, won for him our love and admiration.

We shall think of him with real gratitude for the privilege of having known him as our friend and colleague and for the courage and inspiration that has thus come to each one of us.

BE IT FURTHER RESOLVED: That copy of these resolutions be recorded in our minutes, that they be published in the VIRGINIA MEDICAL MONTHLY and that a copy be sent to his family as an expression of our deep sympathy.

AUSTIN I. DODSON,
AUBREY A. HOUSER,
WRIGHT CLARKSON.

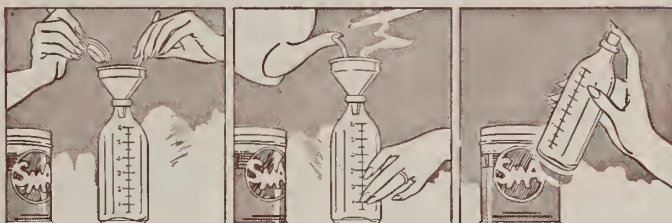
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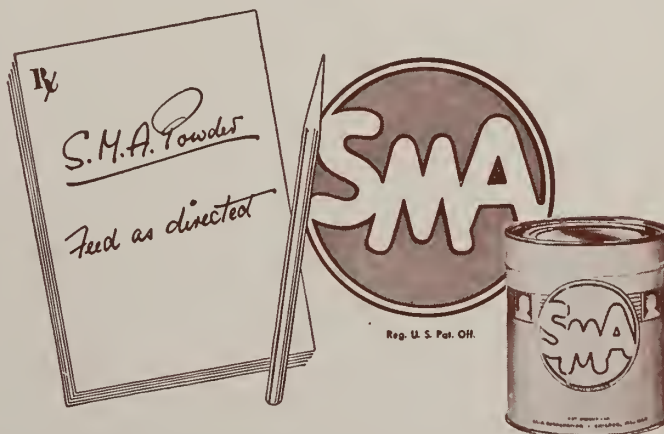
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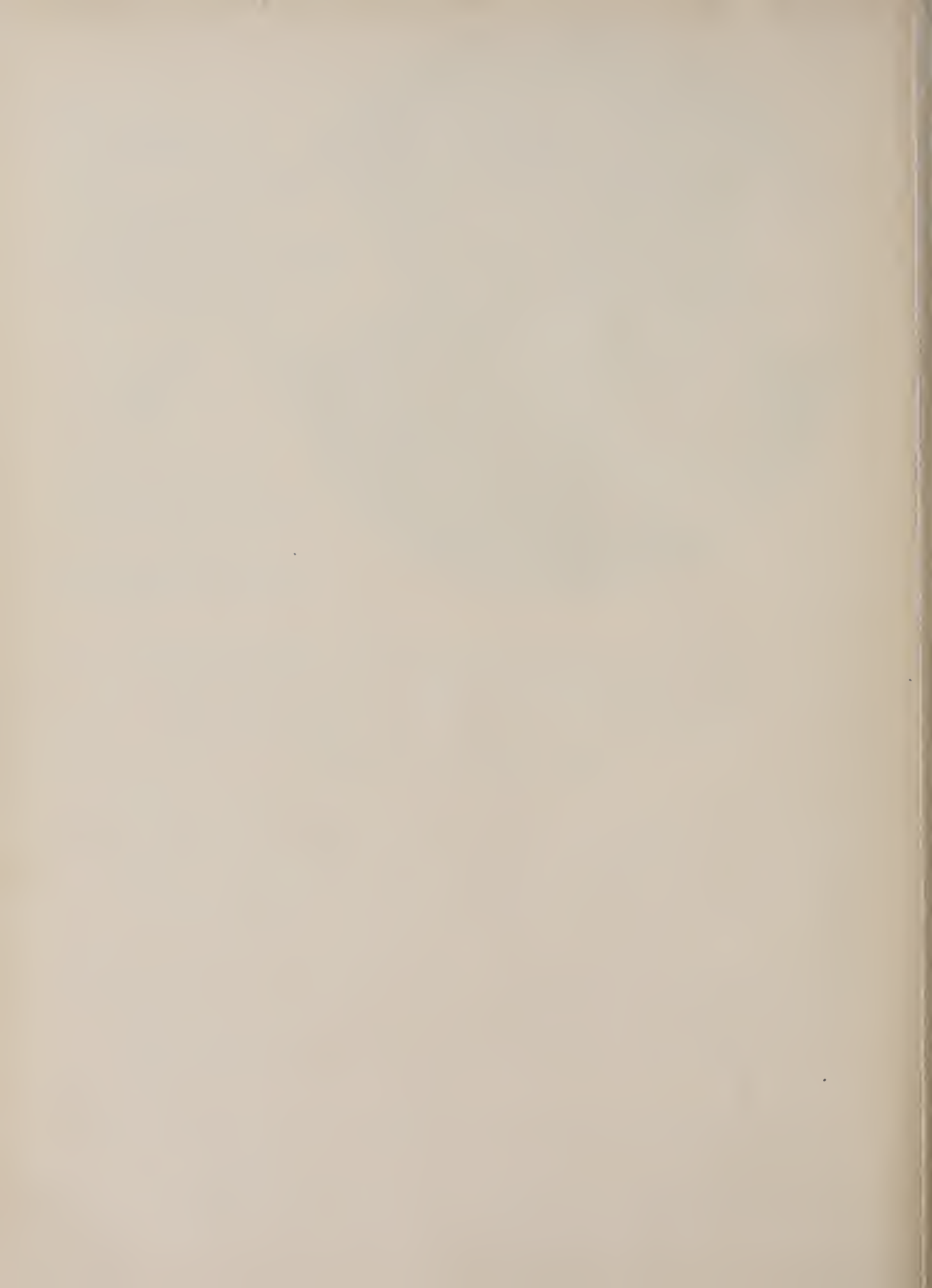
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